The “Around the World Flight Adventure”

A new concept in distance learning

An Educator's Guide

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Produced by the Aviation Museum of New Hampshire
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Program sponsored by:
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To: The education community

From: The Aviation Museum of N.H.

Re: Our 'Around the World Flight Adventure' online learning program

Dear everyone,

First, thank you for all the efforts made to carry on education during the ongoing Covid-19 pandemic. Your work, and your commitment to your students, is more important than ever.

Here at the non-profit Aviation Museum of N.H., we want to help. So, with the aid of our generous sponsors and our corps of dedicated volunteers, we've created a free online program that will be of interest to students, teachers, and the general public.

It's a virtual “Around the World Flight Adventure.” Using our professional-grade flight simulator, we've embarked on a journey around the world that began on May 1. And we're inviting everyone to follow our progress online as we fly from one fascinating place to the next.

As an all-volunteer organization, we take pride in carrying out the part of our mission that calls for inspiring today's youth to become the aviation pioneers and aerospace innovators of tomorrow. It's been a delight for us to create this new program, and we look forward to our upcoming virtual adventures. We hope it will be helpful and fun for you and your students.

Best wishes and bon voyage!

Jeff Rapsis, Executive Director
Aviation Museum of New Hampshire
FAQ

What is the virtual 'Around the World Flight Adventure' program?

It's a free online learning program that takes the form of a multi-segmented virtual flight completely around the world. Using the Aviation Museum's professional grade Elite flight simulator, and terrain software that can render virtually any location on earth, we're traveling from our home at Manchester-Boston Regional Airport and making our way around the world.

How does it work?

At the Aviation Museum, we believe traveling is a broadening experience. As we work our way around the world, once a week we'll post a new flight segment that updates our progress. Each segment will include video highlights captured from the flight deck as we fly over dramatic landscapes and iconic landmarks. Text, in the form of a pilot's log, will touch on a wide range of topics. Each segment will also contain a curated selection of links to additional online resources about topics mentioned.

Who is it intended for?

Text is compiled to touch on issues related to science, geography, historic, politics, and culture, as appropriate. Ideally, each flight segment will contain multiple points of entry for discussions of important topics at many levels. Text is generally written to be meaningful to middle school students, but the flight segments may be useful to educators of all age ranges and abilities. After all, the wonder of travel and flight knows no limits.

Where and when are the segments posted?

Flight segments will be posted online at the Aviation Museum's Web site: www.nhahs.org. We took off from Manchester-Boston Regional Airport on Friday, May 1; new segments are currently being posted every Monday as we work our way around the globe. The journey will continue through the end of August, or until the Aviation Museum re-opens to the public. (We're currently closed due to the Covid-19 pandemic.) We plan to celebrate the arrival back at Manchester-Boston Regional Airport with a fun celebration to which all will be invited.

Why are you doing this?

Part of the mission of the non-profit Aviation Museum of New Hampshire is to inspire an interest in aviation, aeronautics, and technology among young people. To accomplish this, we run a robust educational outreach program in schools throughout the state. However, the ongoing closure of schools due to the Covid-19 pandemic, as well as our own closure to the public, forced us to seek new ways to carry out our mission and help the community. The virtual “Around the World Flight Adventure” is designed to act as a resource for educators trying to inspire students in a remote or virtual learning environment.
How do I use the program?

We'll provide you advance copies of the pilot's log, starting with the current segments and adding more as we go. Use these to design discussions on the wide range of topics that flow from each segment. We hope the material inspires your own creativity as well as that of your students.

Where will the journey take us?

We aren't entirely sure. We departed on Friday, May 1, heading east across the Atlantic towards Europe. After Europe, we plan to roam a wide range of places as we make our way around the world. Input about which destinations we should visit will be welcome via social media; our Facebook page is www.facebook.com/nhahs. But we hope to take a route that will help everyone get a sense of the incredible diversity of people, landscapes, and human experience that make up life on Earth.

What aircraft are we using?

We're flying a (virtual) vintage twin-engine C-47 propeller aircraft, the military version of the early DC-3 airliner. First produced in the 1930s, it went on to be one of the most influential aircraft of the 20th century. Many are still flying today — in fact, we hope to have a real DC-3 fly into Manchester-Boston Regional Airport for our journey-ending celebration. Here's a picture of our aircraft parked in front of the Aviation Museum:

What about feedback?

This is a new and somewhat experimental venture for us. As such, we are open to feedback from everyone, but especially educators. As we put the program together, we started thinking we've hit on something that might be a useful resource even when normal classroom activities resume. Please send thoughts, comments, suggestions and ideas to Jeff Rapsis, executive director, Aviation Museum of N.H. via e-mail at jrapsis@nhahs.org or by phone at (603) 669-4820. Thank you!
TEXT OF PILOTS LOG: FIRST 15 SEGMENTS

This guide includes copies of the first 15 flight segments to be posted online starting on Friday, May 1. Please use these to preview the topics covered in the text, and also to plan discussions or ideas for further study. Each segment will include illustrations or photos of key topics as well as a video of in-flight highlights from the simulated journey.

Segment 001 / Pilot's log: Friday, May 1, 2020

Today's Flight:

Origin: Manchester-Boston Regional Airport (KMHT), Manchester, N.H., USA

Destination: Gander International Airport (CYQX), Gander, Newfoundland, Canada

Distance: 907 miles

Welcome aboard! Today we take off from Manchester, N.H. on the first leg of our virtual around-the-world flight adventure. We'll fly east to the Atlantic Ocean, then follow the Maine coast until we cross into Canada. We'll then fly over New Brunswick, Prince Edward Island, and the Gulf of St. Lawrence until we land in Gander, Newfoundland.

Today's flight deck video shows us taking off from Manchester and circling the city before heading east towards the ocean. Take a good look! It's the last time we'll see New Hampshire out our windows for a
very long time. We're flying in a vintage twin-engine Douglas DC-3 aircraft. To learn more about our airplane, click here.

Our plane has a range of about 1,000 miles. Flying to Europe without stopping is at least 2,800 miles. So to get there, we'll need to hop-scotch across through a series of smaller airports that ring the North Atlantic Ocean. In fact, we'll follow a very historic path: the same route that brought planes and supplies from the U.S. to Europe during World War II.

Called the "North Atlantic Ferry Route," the path started right in Manchester, N.H. During World War II, our airport was called "Grenier Air Base" and served as a massive military staging point for U.S. troops and equipment headed to Europe to help battle Adolf Hitler's Nazi war machine.

Aircraft back then (including our C-47 transport plane) did not have the range to fly non-stop across the Atlantic. Instead, they were sent by the hundreds along the North Atlantic Ferry Route, which we'll follow in our own journey. We'll learn a lot more about this route as we go. But for now, keep in mind that military veterans who flew this same route 80 years ago are still with us. If you meet a veteran of World War II, be sure to say thank you for his or her service!

Today's flight takes us to our first foreign country: Canada! As our northern neighbor, Canada has many similarities to the United States. The major language is English, although people in some areas speak French. The money they use is the dollar, but Canadian money comes with pictures of the Queen of England, which is an entirely separate country. Can you find out why this is so?

Another thing about today's flight is that we'll lose an hour while we're in the air. How is this possible? It happens because time all around the world is divided into "zones." When we cross from the U.S. into Canada, we go from the time zone in the Eastern United States to what's known as the "Maritime" zone in Canada, where time is one hour later. Then, when we get to Newfoundland, we actually lose another 30 minutes! Can you find out why time is divided into zones?

One curious thing about our route is that we'll pass over a part of the coast in Nova Scotia, Canada called the Bay of Fundy. It's famous because here the difference between high and low tide is greater than anywhere on Earth: more than 50 feet! This is due to several geographic features that occur here and nowhere else in the world in quite the same way. To learn more about why the tides are so high, check out our resource link, which includes time-lapse footage showing you high and low tide speeded up so it takes less than a minute.

Onward to Gander! And please join us for our next segment on Sunday, May 3!

Resources to learn more about today's flight:

Grenier Air Base, Manchester, N.H.: [https://military.wikia.org/wiki/Grenier_Air_Force_Base](https://military.wikia.org/wiki/Grenier_Air_Force_Base)

The North Atlantic Ferry Route: [https://en.wikipedia.org/wiki/North_Atlantic_air_ferry_route_in_World_War_II](https://en.wikipedia.org/wiki/North_Atlantic_air_ferry_route_in_World_War_II)

History of Royalty in Canada: [https://www.royal.uk/canada](https://www.royal.uk/canada)
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Canadian Money: https://www.tripsavvy.com/overview-of-canadian-money-1481709

Time Zones: https://www.thoughtco.com/what-are-time-zones-1435358

The Bay of Fundy High Tides: https://www.bayoffundy.com/about/highest-tides/

Segment 002 / Pilot's log: Sunday, May 3, 2020

Today's Flight:

Origin: Gander International Airport (CYQX), Newfoundland and Labrador, Canada

Destination: Goose Bay Airport (CYYR), Newfoundland and Labrador, Canada

Distance: 394 miles

Welcome to the second leg of our around-the-world flight adventure! Today we've departed from the Canadian city of Gander and we're heading north/northwest to our next destination: Goose Bay, a remote community in the sparsely populated area of Newfoundland known as Labrador.

Before we say goodbye to Gander, did you know the airport played a big role in the aftermath of the 9/11 terrorist attacks in 2001? A total of 38 passenger planes flying the North Atlantic to the U.S. and Canada were ordered to divert to Gander, bringing more than 6,000 people to the community for several days. In what became known as 'Operation Yellow Ribbon,' local residents opened the community to host the unexpected visitors. The experience was later turned into a hit musical stage play, "Come From Away."

Today's flight deck video shows us approaching Goose Bay from the southwest, along the Churchill River. Look how different the landscape appears as we make our way north to go "up and over" the North Atlantic on our way to Europe. The winters are long, trees are shorter, and the area is mostly wilderness. We're about 600 miles from the nearest big community, Quebec City, and only one road (the Trans-Labrador Highway) links Goose Bay to the rest of Canada.

Despite its distant location, Goose Bay became a key air base in World War II when it was necessary for airplanes such as our DC-3 to get from the U.S. to Europe to help in the war effort. For a time during the North Atlantic "ferry" operation, Goose Bay was one of the busiest airfields in the world, with hundreds of aircraft stopping to refuel as they hopped their way over the far north.

The airfield continues in use today, and as "CFB Goose Bay" serves as home to one of the largest bases of the Royal Canadian Air Force. From here, patrols of the "5 Wing Goose Bay" cover a vast area of eastern and Arctic Canada. Did you know that in term of land mass, Canada is the second-largest nation on Earth? Do you know which country is No. 1? Do you know where the United States ranks?
As a military airfield, CFB Goose Bay boasts two of the longest airstrips in the far north. Runway 8/26 is 11,051 feet in length: enough for it to serve as an emergency runway for NASA's space shuttle program from 1981 to 2011. In 1983, a NASA Boeing 747 transport aircraft carrying the Space Shuttle Enterprise landed at Goose Bay to refuel on its way to a European tour. This was the first time that a Space Shuttle ever "landed" outside the United States.

Although no major airline serves Goose Bay, occasionally westbound trans-Atlantic flights (from Europe to North America) must land and refuel if they get slowed by a particularly strong jetstream headwind during the flight over. Can you find out what the jetstream is, and what causes it? And why would it slow down an airliner?

Who lives up here? Goose Bay (and its sister community, Happy Valley) is home to only about 8,000 people. Before Europeans came to North America, these lands were home to Native American tribes who maintain a strong presence in the area. Today, just under half of the town's population are descendants of the original tribes.

In fact, 3,380 people in Happy Valley-Goose Bay identify as Métis or Inuit. This gives Happy Valley-Goose Bay the second-highest population of people of Inuit descent of any municipality in Canada. Despite this, English is the common language. Fewer than 300 people in the community can speak an Aboriginal language, meaning the language of their Native American ancestors.

Okay, rest up for our next segment, in which we'll hop across the icy waters and chart a course even further north to the icy world of Greenland! See you for our next flight on Tuesday, May 5!

Resources to learn more about today's flight:

Operation Yellow Ribbon: https://simpleflying.com/operation-yellow-ribbon/


The Royal Canadian Air Force: https://forces.ca/en/about-us/air

Native American Tribes in Canada: https://www.thecanadianencyclopedia.ca/en/article/aboriginal-people

Segment 003 / Pilot's log: Tuesday, May 5, 2020

Today's Flight:

Origin: Goose Bay Airport (CYYR), Newfoundland and Labrador, Canada

Destination: Narsarsuaq Airport (BGBW), Greenland

Distance: 777 miles

The third leg of our around-the-world adventure is our first flight mostly over water — in this case, hundreds of miles due northeast over the cold Labrador Sea. Put on your wool hat and jacket! We're getting so far north we're sure to spot icebergs far below, as March through May is the busiest time of year for large chunks of ice to float south into the North Atlantic. Back in 1912, one such iceberg was hit by the ocean liner Titanic, causing the ship to sink on its very first voyage.

We're heading for Narsarsuaq Airport on the southwest coast of Greenland. It's a small airstrip with a big history, and known for being tough to land at because it's surrounded by mountains and buffeted by harsh winds. You'll see some of that in today's flight video.

But first, what do you know about Greenland? For starters, it's the world's largest island — anything bigger is a continent, such as Australia. To give you an idea of how big, Greenland is more than twice the size of Texas! But despite its size, Greenland is home to only about 50,000 people, who live mostly along the coast in small towns with names that reflect the area's Inuit heritage.

Most of Greenland's interior is covered by a thick layer of ice. In fact, 85 percent of Greenland is buried under the only permanent ice shield on Earth outside Antarctica. The ice, formed by snow that falls but doesn't melt, is miles thick in some places. It's so heavy that parts of the ground under it are more than 1,000 feet below sea level.

It's estimated that if all of Greenland's ice was melted into liquid water, the world's oceans would rise by about 23 feet! Although Greenland's ice shield has receded recently due to climate change, it's been around a long time. Scientists have extracted ice samples more than 100,000 years old from deep below the surface; this natural record can help us understand planetary weather changes over a very long time.

We'll approach Greenland from the southwest. First we'll see clusters of uninhabited islands that make up the nation's forbidding coast. We'll fly over the islands, which grow bigger as we get closer to the coast, searching for Tunulliarfik Fiord. This waterway will take us to Narsarsuaq Airport, one of only two airstrips in Greenland that can handle large aircraft such as modern airliners.

The reason it's here? This remote location was picked out in 1941 as a key supply depot in the "North Atlantic Ferry Route," used during World War 2 to transport equipment and aircraft (such as our DC-3,
or its military cousin, the C-47) from the U.S. to Europe. Known then as "Bluie West One" because the native place names such as Narsarsuaq were considered too difficult to pronounce, the hastily constructed airstrip hosted an estimated 10,000 aircraft being flown to Europe during the war.

After the war, Narsarsuaq Airport continued to have military importance, both for the U.S. during the Cold War and for Denmark, the country that for many years ruled Greenland. The island's strategic importance is reflected in several offers since the 1800s from the U.S. to buy Greenland. More recently, U.S. President Donald Trump again floated the possibility of buying Greenland, an offer that Greenlanders rejected out of hand. Treaties allow the U.S. military to continue to have a presence in Greenland to this day.

Although Denmark still plays a role in government, Greenlanders have been gradually taking steps to asset their independence. In 2008, citizens voted in favor of self-government of judicial affairs, policing, and natural resources. Also, in 2009 Greenlanders were recognized as a separate people under international law, and Greenlandic was declared the sole official language. (Although Danish and English are commonly used and taught in schools.)

Denmark maintains control of foreign affairs and defense matters; for money, Greenland still uses the Danish krone, and the ceremonial head of state remains Queen Margrethe II of Denmark.

Our next leg is another overwater flight, this time to the most northerly point of our journey so far: to the nation of Iceland, a land of fire and ice, and home to the world's oldest parliament. See you on Thursday, May 7!

Did you know? Dried cod and whale with whale blubber is a popular lunch and snack food in Greenland.

Resources to learn more about today's flight:


The Sinking of the Titanic: https://www.britannica.com/topic/Titanic

How Scientists Use Ice Cores: https://climate.nasa.gov/news/2616/core-questions-an-introduction-to-ice-cores/

Ice Melting and Climate Change in Greenland: https://climate.nasa.gov/news/2958/greenland-antarctica-melting-six-times-faster-than-in-the-1990s/


U.S. Proposals to Buy Greenland: https://en.wikipedia.org/wiki/Proposals_for_the_United_States_to_purchase_Greenland


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Segment 004 / Pilot's log: Thursday, May 7, 2020

Today's Flight:

Origin: Narsarsuaq Airport (BGBW), Greenland

Destination: Reykjavik Airport (BIRK), Iceland

Distance: 767 miles

Today we fly northeast from Narsarsuaq, first over the snow-covered southern tip of Greenland and then across the North Atlantic to our next destination: the island nation of Iceland!

We're coming in for a landing at Reykjavik Airport, an historic airfield very close to the city and today used only by small airlines, private aircraft, and "ferry" flights such as ours. All of Iceland's international airline flights operate out of bigger Keflavik Airport, another historic field about 30 miles south.

You might not guess by flying over Reykjavik, but Iceland is a land of striking contrasts. It boasts frozen glaciers and active volcanoes, barren lava plains and lush green meadows, hot geothermal geysers and ice cold rivers that rush off steep coastal cliffs, creating magnificent waterfalls. Visitors come from around the world to marvel at the wild display of the Northern Lights overhead.

If it didn't exist, you'd think Iceland's landscape was made up for a fairy tale. And that may explain something Iceland is famous for: the traditional "saga," or historical tales of great exploits from long ago, handed down over the generations.

Iceland does exist, however, due to geological activity deep under the ocean. As the Eurasian and North American Plates slowly drift away from each other, an unstable area under the Atlantic Ocean resulted. Only in Iceland has this undersea activity reached the surface.

As a result, frequent earthquakes and volcanic eruptions built Iceland starting about 20 million years ago, and continue today. Visitors to Iceland can see the dividing line between the two continental plates as it runs across the landscape. Geothermal energy is used throughout the country for heat and to generate electricity.

Iceland is located just below the Arctic Circle — so far north that at certain times of the year, day and night are very strange. Around Christmas time, the sun never quite rises, leaving everyone in darkness all day long. And from mid-May to mid-July, the sun never quite sets, meaning it's still daylight at midnight. Can you explain why this is so?

Despite being so far north, for most of the year Iceland has a climate not unlike New England in the
U.S.A. This is because of the Gulf Stream, a current in the North Atlantic Ocean that brings warm water from the Gulf of Mexico north and east toward Iceland and Europe.

Because of its location (about half-way between Greenland and England), Iceland became a key link in the early days of trans-Atlantic air travel, when aircraft (such as our DC-3) had limited ranges. That was especially true during World War II, when the United States and many other nations created air bases.

Reykjavik Airport, where we're landing, was the site of Iceland's first airplane flight in 1919; in 1940, with war already underway in Europe, the British converted the area to a military air base, although it still had only a grass runway. In 1946, the base was turned over to the Icelandic government, which operates it today.

Larger Keflavik Airport, about 30 miles to the south, played a more significant role during World War II and for decades afterwards. Built by the U.S. military in 1942, it emerged as a key strategic base during the Cold War, with U.S. troops stationed up until 2006.

Iceland is home to the world's oldest parliamentary governing body, the "Althing," which began in 930 by Viking settlers and continues to this day. For many centuries Iceland was ruled by Denmark and Norway, but eventually declared full independence in 1944.

Iceland today has a population of about 360,000 people, with about two-thirds living in the Reykjavik area. Iceland is about the same size as the U.S. state of Ohio.

Did you know? The hands-down favorite snack of Icelanders is the local version of the hot dog. It's made with Icelandic lamb meat and served with raw onions and a mustard-like condiment called "pylsusinnep."

Our next leg is another overwater flight — the final leg of our "North Atlantic Ferry Route" will bring us to Prestwick Airport in Scotland, the main arrival point for European-bound troops and aircraft during World War 2, and today a busy commercial airport. See you on Saturday, May 9 when we wing our way to Europe!

Resources to learn more about today's flight:

The Great Icelandic Sagas: https://www.britannica.com/art/Icelanders-sagas


Recent Volcanic Activity in Iceland: https://www.theguardian.com/world/2020/apr/10/awakening-volcanic-region-reykjanes-peninsula-iceland-disruption-centuries

All About Geysers in Iceland: https://www.bookmundi.com/t/must-visit-geysers-in-iceland
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The Northern Lights in Iceland: [https://guidetoiceland.is/the-northern-lights/how-to-find-the-northern-lights-in-iceland](https://guidetoiceland.is/the-northern-lights/how-to-find-the-northern-lights-in-iceland)


The Gulf Stream: [https://scijinks.gov/gulf-stream/](https://scijinks.gov/gulf-stream/)

History of Keflavik Airport: [https://www.nat.is/nato-base-keflavik-airport-base-history/](https://www.nat.is/nato-base-keflavik-airport-base-history/)

Iceland's Parliament: the Althing: [https://www.britannica.com/topic/Althing](https://www.britannica.com/topic/Althing)


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Segment 005 / Pilot's log: Saturday, May 9, 2020

Today's Flight:

Origin: Reykjavik Airport (BIRK), Iceland

Destination: Glasgow Prestwick Airport (EGPK), Scotland, U.K.

Distance: 843 miles

Today is our last hop before finally making it all the way across the Atlantic! Along the route, we'll see some unusual scenery and learn a lot of new things. Buckle up and let's go.

We take off from Reykjavik, where we've been the last two days. While in town, did you see any puffins? The North Atlantic Puffin is a seabird that flocks to Iceland in May, when the breeding season begins. About 60 percent of the world's population of puffins inhabits the waters around Iceland. This time of year, you can see colonies even in Reykjavik harbor!

More about puffins: they've earned the nicknames “sea parrots” or “clowns of the sea” thanks to their funny appearance! They change color throughout the year, developing their brighter colors in the spring. At the end of the breeding season, their feathers will change color from white to dark grey.

By the way: did you notice Iceland has almost no trees? Why do you suppose this is? (You can find the answer in our links below.)

We'll head east over Iceland's interior, which is home to 130 active volcanoes. Eruptions are frequent
and predictable: in 2010, one with the tongue-twisting name of "Eyjafjallajökull" spewed ash miles into the sky, disrupting trans-Atlantic airline traffic for weeks.

Iceland's volcanos sometimes erupt under the island's glaciers, causing especially dangerous flash floods called "jökulhlaups" when ice rapidly melts. But overall, Icelanders live in harmony with their geologically active island, using geothermally heated water for public baths and pools.

We now fly south for the last leg over water before reaching Scotland, today's destination. Approaching Scotland, we'll first pass over islands known as the Outer Hebrides. Although we're still quite far north, the Gulf Stream keeps the climate here relatively mild year-round; we've seen the last of snow until we reach high mountain ranges such as the Alps.

The north of Scotland is wild and sparsely populated country; many residents earn their living from the land, often by raising sheep and cattle. Fishing is important, too. People on the islands live in small communities and must take a ferry or airplane to reach mainland Scotland. The chief language of the islands is Gaelic, with English a distant second.

We'll cross low over the Isle of Skye, a large island featuring a dramatic mountain range. Then we'll fly over Oban, a harbor town with a striking landmark: an large unfinished replica of the Roman Colosseum that looms over the town. Locals call it 'McCaug's Folly.' Can you found out how it came to be?

Now we're approaching our destination: Glasgow Prestwick Airport, which has been welcoming flights since 1938. During World War II, this airfield was a key base for the British Royal Air Force and served the original "end point" for the North Atlantic Ferry Route; a tremendous number of aircraft passed through here to help the Allies battle Hitler's war machine. The photo shows Prestwick's ramp in 1943.

Today Prestwick Airport continues in use as a commercial airport (although not a busy one) serving Glasgow, Scotland's biggest city. There's been talk of closing Prestwick in favor of closer-in Glasgow Airport, but its large size and layout of a former military base make it a prime candidate in recent years to be named the United Kingdom's first "Space Port."

About Scotland: the land known as Scotland had a long and proud history of independence prior to joining with England in 1707 to create what's now called the "United Kingdom," which also includes Wales and Northern Ireland.

In recent years, this relationship has been tested by a growing movement in Scotland to reassert independence. With the U.K.'s recent "Brexit" departure from the European Union, there's renewed interest in Scotland going its own way, possibly to rejoin Europe.

Resources to learn more about today's flight:


Why Iceland has almost no trees: [https://grapevine.is/mag/2018/05/17/ask-a-forester-why-are-there-so-few-](https://grapevine.is/mag/2018/05/17/ask-a-forester-why-are-there-so-few-)}
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trees-in-iceland/

Guide to Iceland's volcanoes: https://guidetoiceland.is/nature-info/the-deadliest-volcanoes-in-iceland


Travel story about the Isle of Skye: https://www.usatoday.com/story/travel/destinations/2019/03/04/scotland-isle-skye/3013060002/

More about McCaig's Folly, also known as McCaig's Tower: https://www.undiscoveredscotland.co.uk/oban/mccaigstower/index.html

History of Prestwick Airport: https://www.secretscotland.org.uk/index.php/Secrets/GlasgowPrestwickAirport

Scottish independence: https://www.smithsonianmag.com/history/brief-history-scottish-independence-180973928/

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Segment 006 / Pilot's log: Wednesday, May 13, 2020

Today's Flight:

Origin: Glasgow Prestwick Airport (EGPK), Scotland, U.K.

Destination: RAF Cosford (EGWC), England, U.K.

Distance: 240 miles

Today we're heading south from Prestwick Airport in Scotland down into the heart of England, to a historic military airbase in the town of Cosford that's now home a spectacular museum for Britain's Royal Air Force.

Prestwick Airport has its share of history, too. The airport hosted the only known visit of Elvis Presley, the King of Rock 'n' Roll, to British territory. It happened on March 3, 1960, when Presley was returning to the U.S. after finishing military service in Europe. Plaques at Prestwick still commemorate the occasion.
As we fly south, we'll cross the border between Scotland and England. Just south of that, at a narrow point in the island of Great Britain, we'll cross the path of Hadrian's Wall, which was built in the 2nd century A.D. to mark the northern limit of the Roman Empire. The wall is made of stone, is 73 miles long, and stretches nearly from coast to coast. Much of it still stands today, nearly 2,000 years after it was built.

Did you know that the Romans ruled much of Britain for several centuries? Although the Roman Empire collapsed 1,500 years ago, we'll encounter its presence even today as we travel throughout certain parts of Europe and Africa.

For example: in the U.K., money is not counted in dollars, but "pounds." Today, the symbol for pounds is "£" or a fancy capital L. This is a leftover from Roman days; in the Roman language of Latin, the word for "pound" is "libra." (By the way, that's why when you weigh something, the abbreviation for "pound" is "lb'.)

We then fly over Lake District National Park, a 912-square-mile preserve and the most visited national park in England. Unlike national parks in the U.S., parks in England are not pristine and undeveloped wilderness, but are working landscapes. In England, the park designation places restrictions on land usage to help preserve the area's rural character.

This area, home to the largest and deepest natural lakes in England, was popular with a group of early 19th century writers known as the "Lake Poets," including William Wordsworth, Samuel Taylor Coleridge, and Robert Southey. Inspired by nature, here they wrote works such as Wordsworth's 'Preludes' and Coleridge's 'The Rime of the Ancient Mariner.'

We then cross over Liverpool, a city of 500,000 people on the banks of the Mersey River. It's where the Beatles got their start in the 1960s; their hometown has since immortalized the group with museums, exhibits, and in statue form. Liverpool is also known for its maritime history: In the 19th century, Liverpool was a major port of departure for English and Irish emigrants to North America.

We're then due for arrival at RAF Cosford, a former military airfield that's now home to one of the world's top aviation museums. Established in 1979, the Royal Air Force Cosford Museum has grown to include an enormous collection of aircraft, engines, complex missiles, and aviation paraphernalia. They even have a British version of our aircraft, called the "Dakota" on display!

The museum also encompasses political history, in the form of the National Cold War Exhibition, which opened in 2007. The Cold War, which came after World War II, is the term used for decades of geopolitical tensions in the era of Communist expansionism. We'll hear a lot more about the Cold War as we travel the globe.

For now, we'll spend time exploring the amazing collection on display at Cosford, which focuses on military aviation. Many of the aircraft are very rare, such as the only Boulton Paul Defiant in the world and one of only two surviving Vickers Wellingstons left in the world.
Around The World Flight Adventure / An Educator's Guide

Then we'll rest up for our next flight, which will bring us over one of the world's most famous landmarks: the ancient site of Stonehenge on England's Salisbury Plain!

Resources to learn more about today's flight:

Elvis Presley in Scotland:

Hadrian's Wall:
https://www.english-heritage.org.uk/visit/places/hadrians-wall/hadrians-wall-history-and-stories/history/

Abbreviation for "pounds":
http://www.worldwidewords.org/qa/qa-pou1.htm

Lake District National Park, England:
https://www.lakedistrict.gov.uk/

William Wordsworth and the Lake Poets:
https://www.britannica.com/topic/Lake-poet

The Beatles and Liverpool:

Liverpool's Maritime History:
https://www.maritimeheritage.org/ports/englandLiverpool.html

Royal Air Force Museum Cosford: https://www.rafmuseum.org.uk/cosford/

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Segment 007 / Pilot's log: Monday, May 18, 2020

Today's Flight:

Origin: RAF Cosford (EGWC), England, U.K.

Destination: Southampton International Airport (EGHI), England, U.K.

Distance: 105 miles straight-line distance; about 450 miles on today's circular route over Ireland.

Today's flight takes us west from Cosford, out over the Irish Sea, and then over Dublin, the capital city of Ireland. We'll fly over the Emerald Isle to Ireland's west coast, home to an unusual aviation museum. We'll then fly south over Cork, Ireland, near the site of a famous shipwreck that changed history, then back over to England, where we'll see the mysterious ancient site of Stonehenge before landing at the port of Southampton on the English Channel.
Crossing the Irish Sea, we approach Ireland, a nation with a long history that encompasses the ancient settlements of the Celtic people, relatively early adaptation of Christianity starting in the 5th century, and then multiple Viking invasions followed by nearly 1,000 years of strife with the English over religious and political freedoms. Although Ireland won full independence in 1921, the portion known as "Northern Ireland" remains part of the United Kingdom and is governed by London.

Dublin, Ireland's capital and largest city, is home to the Guinness Brewing Co., but it's also known as a longtime center of literature and learning. It's the birthplace of three winners of the Nobel Prize for Literature: playwrights Samuel Beckett and George Bernard Shaw and poet William Butler Yeats. Other writers include dramatist Oscar Wilde and the novelist James Joyce, who wrote the renowned short-story collection Dubliners (1914) and also the novel Ulysses (1922), which follows a day in the life of Dublin in 1904 patterned after Homer’s Odyssey.

Continuing over Ireland to the west coast, we'll reach Foynes, a small harbor town that's home to a spectacular destination: the "Foynes Flying Boat and Maritime Museum." Visitors here can learn all about the early days of long distance flights, when large planes were equipped with floats and used water as their runways. In the 1930s, trans-Atlantic flights from New York would first arrive in Foynes, which for a time became a major port of entry to Europe. Today, the museum is home a many exhibits, including a replica Pan American B314 flying boat called the "Yankee Clipper" with amenities that include a dining room seating 14 people!

Foynes is also where Irish Coffee was invented, and part of the museum celebrates that important distinction. And although we're not landing in Ireland, let's salute one of the nation's signature snack foods: Tayto Cheese & Onion Crisps, which are what we call potato chips. In Great Britain and Ireland, "chips" are what we call French fries. And we supposedly all speak the same language!

Leaving Foynes, we'll fly south over the countryside to the city of Cork, and you'll see why Ireland is known as the "Emerald Isle" for its many shades of green. Ireland, like Great Britain, has a fairly mild climate due to the Gulf Stream, and the moderating influence of the sea that surrounds the Irish isle, which is about the size of Indiana. As a result, Ireland has mild winters and relatively cool summers, even though it's at the same northern latitude as southern Alaska.

Ireland is a place of great beauty, but can also be a hard, unforgiving land. In the 1840s, the "Great Potato Famine" (caused by a spud-killing fungus) led to mass starvation, prompting more than a million people to emigrate to the U.S. and Canada. Today about 10 percent of Americans have Irish ancestry, including the writer of this text, whose family left Cork in the 19th century for a better life in America.

Flying off the coast of Cork, we'll pass over the site of a tragic shipwreck that changed the course of history. In March 1915, a British passenger liner called the Lusitania was sunk by a German submarine, killing 1,198 people. The attack shocked the world, and was a major factor in the United States entering World War I two years later. Why did the Germans attack a passenger ship? Find out more in the links.

Now we head east back to England. We'll soon be over what's called the Salisbury Plain, a flat area home to one of the world's most famous ancient sites: the ruins known as Stonehenge. Formed by large
stones rising 24 feet above ground and arranged in a circle, the ruins are all that's left of a larger complex that archaeologists believe was built between 5,000 and 4,000 years ago.

Whoever built Stonehenge left no written records, so all we can do today is guess about how and why it was built. Because the openings of the stones align with the position of the sun at certain key times of the year, some theories say that it was a kind of prehistoric calendar. You can learn a lot more about Stonehenge, and make your own guesses about why it was built, using the links below.

Now we'll fly south to Southampton, a city on the English Channel with a harbor that once was a key landing point for trans-Atlantic passenger liners. Back before jet airliners, most people would cross the Atlantic on big ships that would dock at Southampton, and then take a "boat train" for the final distance to London.

One famous ship that made only a single voyage that began here. Earlier in our journey, we flew near the spot in the North Atlantic where the Titanic struck an iceberg on its first trip and sank. Southampton was home to most of the ship's crew. About one third of the Titanic's 1,517 victims came from this city.

Okay, we're here. Rest up. Our next flight will take us right over central London!

Resources to learn more about today's flight:

Why do countries drive on different side of the road?  
https://www.worldstandards.eu/cars/driving-on-the-left/

About the Irish flag:  
https://www.irishcentral.com/roots/history/story-irish-flag

The history of Ireland:  
https://www.petersommer.com/ireland/history

A guide to literary Dublin:  

A walking tour of James Joyce's London  
https://www.dochara.com/tour/itineraries/joyce-tour/

The Foynes Flying Boat and Maritime Museum  
https://www.flyingboatmuseum.com/

The story of Irish coffee:  
https://www.flyingboatmuseum.com/irish-coffee-center/

A guide to Irish junk food:  
Why is Ireland called the Emerald Isle?  
https://www.irishcentral.com/roots/history/how-did-ireland-come-to-be-called-the-emerald-isle

What caused the Irish potato famine?  
https://www.history.com/topics/immigration/irish-potato-famine

The sinking of the Lusitania  

Visiting Stonehenge  
https://www.english-heritage.org.uk/visit/places/stonehenge/

History of Stonehenge  
https://www.english-heritage.org.uk/visit/places/stonehenge/history-and-stories/history/

15 Monumental Facts about Stonehenge:  

Southampton Visitor's Guide  
https://visitsouthampton.co.uk/

The Titanic and Southampton  

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Segment 008 / Pilot's log: Thursday, May 21, 2020

Today's Flight:

Origin: Southampton International Airport (EGHI), England, U.K.

Destination: London City Airport (EGLC), England, U.K.

Distance: 71 miles

Hope you enjoyed our visit to Southampton, England. This port city's history goes back a long way: in August, 1620, the Mayflower and its companion vessel, the Speedwell, both docked here in preparation for their epic voyage across the Atlantic to the New World. Only the Mayflower would make the trip, leaving later in the year from Plymouth, England and arriving at Cape Cod in November, 400 years ago this year.

Southampton also has a claim to literary fame, too. English author Jane Austen lived here from 1806 to 1809, just prior to the publication of her first novel, 'Sense and Sensibility' in 1811.
Around The World Flight Adventure / An Educator's Guide

And one final note: American frozen food magnate Clarence Birdseye used Southampton as the test market for introducing frozen fish fingers in the U.K. in the mid-1950s. But this being our next-to-last stop in England, we chose to indulge in a true British culinary tradition: authentic fish and chips.

Fish and chips here aren't anything like in the U.S. Often bought as "takeaway" (or take out) from a local "chippy," in Britain you get a big hunk of white fish (often cod) fried in a golden batter, then doused with vinegar and salt, and served with thick potato "chips" or what we call French fries. The dish used to be served on old newspapers, but that practice mostly stopped in the 1980s due to health concerns.

Today's flight is short, just over 70 miles. But our journey contains as much to see as any segment we've flown so far. That's because today we fly over the great, storied city of London, capital of the United Kingdom, longtime seat of the British Empire, and spiritual home of the English language.

Before we reach London, however, we'll fly over a country estate, Highclere Castle, made famous in recent years as the setting for the TV series Downton Abbey. It's no movie set, though: it's a real English country manor privately owned by Lord and Lady Carnarvon. Ironically, the estate was in need of major repairs that have only been made possible with an increase in admission fees thanks to the success of Downton Abbey.

An estate has been here at least since the 9th century, and it appears in the "Domesday Book," the famous census conducted by William the Conqueror after claiming the throne in 1066. Among the estate's distinctions: the agreement that established Canada's independence from the U.K. was drafted here in 1867; a B-17 bomber crashed on the grounds during World War II; and today the castle houses Egyptian artifacts collected by an ancestor of Lord Carnarvon who helped discover the tomb of Tutankhamun in Egypt in 1922.

We'll approach London from the west, and follow the Thames River downstream as we fly over London's urban heart. The Thames, which flows through London and links it to North Sea, is the reason London came into being. The city grew at the first spot in the river narrow enough for a permanent bridge to be erected across it.

This first "London Bridge" was built by the Romans in the year 55 A.D., near the start of the Roman Empire's nearly 400-year presence in Britain. "Londinium" was the name they gave the settlement that sprang up at the bridge's northern end, and it became the capital of Roman Britain.

After the Romans left in about 400 A.D., London survived several centuries of neglect to emerge as a key commercial center during Medieval era. By the 10th century, it had also become the seat of government for rulers consolidating power over the many warring kingdoms of Britain.

From then on, London took its place among the world's great cities, attracting immigrants, dreamers, criminals, and geniuses alike. Its history is rich with accomplishment and full of names you'll recognize, from Geoffrey Chaucer to Jack the Ripper. We've listed some resources to learn more in the links below.
On today's flight, interesting sites begin with Windsor Castle, far out at the city's western fringe. It's a real castle, built starting in the 11th century after the Norman invasion of England by William the Conqueror. Since the time of Henry I, it's been used by 39 reigning monarchs and is the longest-occupied palace in Europe. The current owner, of course is Queen Elizabeth II, who spends most of her private weekends here. Windsor Castle is still very much a working royal palace and is regularly used for ceremonial and State occasions, including official visits from foreign heads of state.

Next we'll see something a little more modern: Heathrow Airport, London's main international airport and one of the world's great crossroads of travel. Just beyond London's central core, the open countryside around the medieval village of Heathrow had played host to aviation companies since the early days of flight. After World War II, the area was developed into London's major commercial airport (causing the village to vanish), a role it holds to this day.

Among its many distinctions, Heathrow was home to the British Airways fleet of Concorde supersonic aircraft, which flew in passenger service from 1976 to 2003. We're not going to land here, but at London City Airport, a smaller field just east of London's central business district, also called 'The City.'

Next is Hampton Court Palace, a spectacular palace best known as the base of operations for King Henry VIII and his court of over 1,000 followers. No longer used by the Royal Family, it's open to the public and a popular tourist attraction. Among its distinctions: what is reputed to be the world's largest grape vine, planted by George III in 1763. In more recent years, it's been used as a setting for films ranging from 'A Man for All Seasons' (Winner of 'Best Picture' at the 1966 Academy Awards) to 'Pirates of the Caribbean: On Stranger Tides.' (2011).

We'll fly directly over Buckingham Palace, the main residence of Queen Elizabeth II where tourists flock from all over the world to witness the famous changing of the guard. The palace, which has 775 rooms, is not only the Queen's home, but also the administrative offices for the Royal Family and its many enterprises and charities. The palace is in St. James Park, and is connected to Trafalgar Square by a grand roadway called 'The Mall,' which in Britain is pronounced like the first syllable of 'malady.'

Just as Buckingham Palace serves as the Royal Family's center of operations, the nearby Palace of Westminster is the seat of British government. Located on the north banks of the Thames, the palace includes the Houses of Parliament and the landmark clock known as 'Big Ben.' Here laws are made and public policy decided by the House of Lords and the House of Commons, an ancient system of governance that's been the model for many others around the world, including the U.S. Congress in Washington, D.C. and many state legislatures.

Before there was a parliament, however, there was a document called the Magna Carta. Written in 1215, it limited the power of the crown and protect the rights of the nobility. This was the first step toward the kind of government in place in many parts of the world today in which central power is balanced by individual rights. The Magna Carta was signed at Windsor Castle, which we passed over earlier.

In London, the Houses of Parliament and Big Ben are designed in the style known as "Gothic," making
them look very old, but they date only from the mid-19th century. Much, much older is nearby Westminster Abbey, a church first established here in the 7th century. Parts of the current church date from the 1100s, and since the crowning of William the Conqueror in 1066, it's the traditional place of coronation and burial site for English and, later, British monarchs. Since 1100, there have been 16 royal weddings at the abbey, most recently the marriage ceremony of Prince William and Kate Middleton in 2011.

Across the Thames is a much newer landmark: the London Eye, a giant Ferris wheel 443 feet in diameter erected to celebrate the millenium in 2000. It takes a half-hour for each of its 32 passenger pods to make a full circle. As we continue along the Thames, we're going back in history, for the oldest parts of London are further downstream. However, the city is not a museum, so don't expect a medieval village: much of ancient London has been replaced by modern skyscrapers and office buildings.

Dominating the north side of the Thames is St. Paul's Cathedral, with its iconic dome. The massive church, the masterpiece of architect Sir Christopher Wren and a symbol of the city, was built in the early 1700s following a massive fire in 1666 that consumed much of medieval London, including an earlier church that stood here for 600 years. During World War II, St. Paul's was a prime target for Hitler's bombers, which severely damaged but did not destroy it. More recently, it was the site for the Royal Wedding of Prince Charles and Lady Diana in 1981.

Just east of St. Paul's Cathedral lies the very oldest part of London, the area known as the "Square Mile" first settled by the Romans 2,000 years ago. Today it's home to some of London's newest skyscrapers, which house global financial services firms and other major businesses. As a legal entity, the "City of London" still consists of the original area formerly enclosed by the Roman walls, most of which vanished long ago.

Nearby, still on the north side of the Thames, stands the ancient fortress known as the Tower of London. Another project of William the Conqueror, the castle has endured as an important part of city life for nearly 1,000 years. Its famous prison was used to jail people from 1100 to 1952. Many numerous rituals are maintained at the Tower, including the keeping of six ravens at all times, in the belief that if they are absent, the kingdom will fall.

Crossing the Thames near the Tower of London is another iconic landmark: Tower Bridge, a drawbridge with its famous pair of towers. Unlike the Tower of London, the bridge is actually fairly new: it was built in 1894, at the height of the Victorian era, when London was the capital of the British Empire, which encompassed one quarter of the world's population. Tower Bridge's famous upper walkways allowed people to cross the Thames during the frequent times the bridge was raised for ships.

Tower Bridge is not the same as London Bridge, the ancient span first over the Thames built by the Romans. London Bridge, located just upriver from Tower Bridge, was the reason the city first came to be. First built of timber, it was rebuilt many times until medieval times, when it was widened enough for houses and businesses to be built on it. Crossing from one side to the other, it was hard to know you were on a bridge!
London Bridge was the only crossing over the Thames until the 18th century. Since that time, it's been rebuilt several times, most recently in the 1970s, when the stone version from the 19th century was sold to an American who moved it to Lake Havasu City, Arizona, where it stands today. Back in London, today's "London Bridge" is a modern steel bridge, one of many that cross the Thames.

Finally, no visit to London, however brief, would be complete with mentioning William Shakespeare, the playwright and poet who lived and worked here about 400 years ago. Regarded as the greatest writer in the English language, much of his work was first staged in London in a theater called 'The Globe' on the south bank of the Thames. The Globe, like so much of old London, was lost to fire. But a recreated version opened near the site in 1997 and is in use for stagings of plays by Shakespeare and other writers.

We'll be coming in for a landing at London City Airport, a field just east of the central part of the city.

*Resources to learn more about today's flight:*


- The Mayflower and the Speedwell: [https://www.history.com/topics/colonial-america/mayflower](https://www.history.com/topics/colonial-america/mayflower)


- All about fish and chips: [https://greatbritishmag.co.uk/uk-culture/history-of-fish-and-chips/](https://greatbritishmag.co.uk/uk-culture/history-of-fish-and-chips/)


- William the Conqueror's 1066 invasion of England: [https://www.history.com/this-day-in-history/william-the-conqueror-invades-england](https://www.history.com/this-day-in-history/william-the-conqueror-invades-england)

- Windsor Castle: [https://www.rct.uk/visit/windsor-castle](https://www.rct.uk/visit/windsor-castle)

- A brief history of Heathrow Airport: [https://londonist.com/london/history/a-brief-history-of-heathrow-airport](https://londonist.com/london/history/a-brief-history-of-heathrow-airport)

- Hampton Court Palace: [https://www.hrp.org.uk/hampton-court-palace/#gs.6mlcds](https://www.hrp.org.uk/hampton-court-palace/#gs.6mlcds)
The Royal Family's official Web site:
https://www.royal.uk/royal-family

Buckingham Palace:
https://www.royal.uk/royal-residences-buckingham-palace

Houses of Parliament:
https://www.parliament.uk/visiting/

More about the Houses of Parliament:

Big Ben:
https://www.parliament.uk/bigben

About the Magna Carta:
https://en.wikipedia.org/wiki/Magna_Carta

Westminster Abbey:
https://www.westminster-abbey.org/

London Eye facts you didn't know:
https://www.cntraveler.com/stories/2015-08-10/london-eye-things-you-didnt-know-tourist-attraction

St. Paul's Cathedral:
https://en.wikipedia.org/wiki/St_Paul%27s_Cathedral

More about St. Paul's Cathedral:
https://www.britannica.com/topic/Saint-Pauls-Cathedral-London

The City of London:
https://www.discoverbritainmag.com/londons-ancient-square-mile/

Tower of London official Web site:

More about the Tower of London:

Ravens of the Tower of London:

Tower Bridge:
https://www.towerbridge.org.uk/

More about Tower Bridge:
https://www.britannica.com/topic/Tower-Bridge
Segment 009 / Pilot's log: Monday, May 25, 2020

Today's Flight:

Origin: London City Airport (EGLC), England, U.K.

Destination: Caen – Carpiquet Airport (LFRK), Caen, France

Distance: 296 miles

Today we'll continue our around-the-world journey by leaving London, flying east/southeast over the countryside of Kent to Canterbury, an ancient religious center and home to a famous cathedral. We'll then fly along the English coast, seeing the white cliffs of Dover and the Isle of Wight, before heading south over the English Channel to France. As today is Memorial Day in the U.S., we'll fly over beaches of the French Normandy coast, where the D-Day landings took place during World War II, before we land in the city of Caen, our first stop in continental Europe. Let's go!

In medieval times, long before
airplanes such as ours, people made the journey from London to Canterbury on foot or by horse as a religious pilgrimage. They would travel there to visit the shrine to Thomas Becket, the head of the Christian church in England who was murdered in 1170 in a power dispute with King Henry II. Having died for his beliefs, Becket was named a saint and became a powerful symbol of the church and religion.

Such pilgrimages were the basis of 'The Canterbury Tales,' an important work of early literature. Written by Geoffrey Chaucer in the 1390s, it follows a group of pilgrims who engage in a story-telling contest on their way to Canterbury. It's one of the first major works written in English, or in this case "Middle English," an early version of the language in common use today. Populated by a wide range of characters, it's also a rare window into life as lived more than 600 years ago.

Canterbury has hosted a settlement since prehistoric times. The Romans occupied the city starting in the 1st century A.D., eventually adding an earthen wall for protection. Parts of this wall, rebuilt in the 14th century, still stand today. After the Romans retreated in 410, the area languished until Pope Gregory sent his emissary Augustine to reestablish Christianity in Britain.

The church Augustine established here in 597 was rebuilt in stages to become Canterbury Cathedral, which has remained a center for British religious life through many upheavals over the centuries. During World War II, the cathedral was a prime target for German bombers; citizens protected it in part by lighting fires to give the impression that the structure was already burning.

Today the cathedral is home church to the Archbishop of Canterbury, who leads the Church of England, which in turn is the mother church for the worldwide Anglican communion. This branch of Christianity was founded in the 1530s by King Henry VIII after a dispute with the Pope. You can find out more about this history-making conflict in the resource links below.

In medieval times, the pilgrimage from London to Canterbury (about 67 miles) on foot would take four days. Today, we'll cover that distance in about a half-hour. Even if we didn't have our own airplane, we could make the trip by train from downtown London in just over an hour. Great Britain, like the rest of Europe, has a more developed passenger train system than in the United States, with high-speed rail lines linking major cities. Why do you suppose this is?

Flying south to our next location, the coastal town of Dover, we'll see where the high-speed rail line linking London to Paris enters a long tunnel under the English Channel. The Channel Tunnel, called 'The Chunnel,' is 31 miles long and connects Great Britain to France. Opened in 1994, it's the first link between Britain and mainland Europe since the last ice age 10,000 years ago, when sea levels were low. Read more about this "land bridge" in the links.

Dover is famous for its miles of tall white chalk cliffs that line this part of the English coast. Some are as high as 350 feet! Visible from the coast of France across the English Channel (here at its most narrow), during World War II the cliffs became a symbol of peace and homecoming by virtue of a popular song, 'The White Cliffs of Dover.' Although massive, the cliffs are actually quite fragile, made up of layers of ancient microscopic sea creatures deposited on the ocean floor and pressed together over tens of millions of years.
Continuing west along the coast, we come to Hastings, near the site of the famous Battle of Hastings in 1066 that saw William the Conqueror arrive from France to take over medieval England from its Anglo-Saxon rulers. A little farther west, we come to Brighton, a beach resort town that became hugely popular in the 19th century when the development of new railway lines brought it within reach of day-trippers from London. Among the local landmarks are the famous "Brighton Pier," which extended out into the English Channel. The beaches here, however, are not sandy or flat but are composed of pebbles and rounded stones that tend to create steep banks. They're called "shingle" beaches and are a common feature of the English coast.

Further west, we come to the Isle of Wight, a large island just off the south coast that protects the harbors of Portsmouth and Southampton, where we stopped a few days ago. Due to its location, the Isle of Wight was an important crossroads in Britain's bronze and iron ages, as evidenced by many ancient coins found here. Going back even further in time, the Isle is home to some of Europe's most notable dinosaur fossils. You can learn more about why dinosaur fossils are found here in the links below.

Long a rural outpost, the Isle of Wight became fashionable as a vacation resort in the 19th century when Queen Victoria established a summer home here. Statistics show that it gets more sunshine than any other spot in Great Britain. Due to a quirk in geography, the island's north coast is one of the few places on Earth to see four high tides each day instead of the normal two. Information in the links explains why.

And now we turn south, flying over the English Channel to the coast of France, about 90 miles away. This same distance was traversed on June 6, 1944, known as D-Day, by Allied troops traveling by air and sea from England in the first steps to finally liberating Europe from Hitler's armies in World War II. The major attack, kept a secret, caught the Germans by surprise, but still prompted fierce fighting for weeks along the French coast that summer as Allied troops struggled to establish a foothold and advance.

As we fly over to France, the English Channel seems peaceful today. This was not the case for soldiers crossing these waters in the vanguard of the D-Day invasion on June 6, 1944. In the pre-dawn darkness of that day, they prepared to follow orders: to storm the beaches via landing craft or to parachute behind enemy lines by jumping out of the same type of aircraft we're flying today. More than 150,000 soldiers from the U.S., Britain, Canada, and other nations participated.

Many were lost that first morning, that first day, and in the weeks that followed. Because today is Memorial Day in the United States, today we honor the memory of all who served and did not return, here and anywhere. We honor them by remembering the sacrifices they made. And, in our flight around the world, we'll do it by making our arrival in France with a low-altitude pass over the very beaches in Normandy where so much sacrifice was made on D-Day during World War II.

We've seen a lot of cathedrals and churches on our trip, and we'll see many more. But this place is holy, too. Like a church, it's a place that should inspire us to think thoughts bigger than ourselves. Although our trip is a virtual one, our duty to remember those who came before us is very real indeed.
After passing low over the Normandy beaches, we'll land in the small French city of Caen. The airport here, not from from the coast, was itself the site of fierce fighting following the initial D-Day invasion. In fact, nearly the whole city was destroyed and had to be rebuilt after the war. Today, like so much of the French countryside, it's a place of beauty and contentment. It's a fine place for our first stop in continental Europe. We can't wait for dinner and our first taste of world-famous French cooking.

Resources to learn more about today's flight:

More about Thomas Becket:
https://www.historic-uk.com/HistoryUK/HistoryofEngland/Thomas-Becket/

The Canterbury Tales:
https://www.britannica.com/topic/The-Canterbury-Tales

About Canterbury, England:

About the Church of England:
https://www.history.com/topics/british-history/church-of-england

Henry VIII and the Reformation:

Comparing European trains to America's rail network:

The 'Chunnel,' or Channel Tunnel:
https://en.wikipedia.org/wiki/Channel_Tunnel

More about the Channel Tunnel:
https://www.britannica.com/topic/Channel-Tunnel

All about the white cliffs of Dover:

The ancient land bridge between Britain and Europe:

The Battle of Hastings:
https://www.history.com/topics/british-history/battle-of-hastings

Brighton as a beach resort:
https://www.travelandleisure.com/trip-ideas/brighton-rocks-on

About shingle beaches:
https://www.travelandleisure.com/trip-ideas/brighton-rocks-on
Ten weird things about the Isle of Wight:
https://www.sykescottages.co.uk/blog/10-weird-wonderful-isle-of-wight/

Dinosaurs and the Isle of Wight:

Why the Isle of Wight has four daily tidal cycles:
https://www.thenakedscientists.com/articles/questions/why-do-some-places-have-2-tides-day-and-others-4

Overview of D-Day:
https://www.history.com/topics/world-war-ii/d-day

About Utah Beach:

About the Longues-sur-Mer battery:

Information about Caen, France:
https://en.wikipedia.org/wiki/Caen

French cooking:
https://www.lefoodist.com/guides/cooking-classes-paris/cookingparis143.html

The rise and fall of French cuisine:

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international diplomacy.

Although English is now more common around the globe, to this day your passport still contains French translations of all important text. In terms of usage, French is spoken by about 229 million people across the globe, making it the 10th most popular language on the planet. English is second, with 983 million speakers; Chinese is No. 1 at 1.1 billion.

Also: French is often called a "romance" language, but that's not because it's used by people in love. (Although that's sometimes the case!) It means French is part of the "Romance" family of languages, so named because it's a direct descendant of Latin, the language of Ancient Rome spoken 2,000 years ago and spread throughout Europe as the Roman Empire expanded. Other romance languages are Spanish, Portuguese, Italian, and Romanian. Studying Latin can provide a good foundation for learning these other languages because of how closely related they are.

Paris, one of the world's great cities, is the capital of France and the international center of French culture. Located on the Seine River, it's famous for its art, history, culture, food, and for people who know how to savor the finer things in life. Although a vibrant and contemporary city, Paris has ancient roots: like London, it developed around a convenient river crossing, in this case at the Île de la Cité, the island where the Cathedral of Notre Dame stands today.

Unusual for world capitals, Paris has never been destroyed by invasion or natural catastrophe. But it's seen its share of conflict over the centuries; the violent Revolution of 1789 saw the overthrow of the French monarchy and the execution in 1793 of King Louis XVI and his bride, Marie Antoinette, via the guillotine.

Our first site over Paris is the Palace of Versailles, originally a hunting lodge but expanded enormously by King Louis XIV starting in the 1660s. The sprawling and ornate complex eventually became the royal family's permanent home, and its incredible opulence helped fuel resentment that led to the French Revolution. Although the monarchy didn't survive, Versailles did, and today is a UNESCO World Heritage Site and a source of great national pride.

The Eiffel Tower, once the world's tallest structure, is an international symbol of Paris. Built along the Seine by engineer Gustave Eiffel for an 1889 exhibition, it was meant to be temporary, but remains standing today, as popular as ever: in fact, with 7 million visitors each year, it's the world's busiest paid
admission attraction. Eiffel, a pioneering engineer, also designed the structural support system for the Statue of Liberty, which the French presented to the United States in 1886.

Further up the Seine River stands Notre Dame, the iconic cathedral and another symbol of Paris. Located at the center of prehistoric and medieval Paris, a church has stood at this site since Roman days, when a temple to the Roman God Jupiter was built here. Other churches followed the arrival of Christianity; the current Gothic-style cathedral was begun in 1160 and has endured through centuries of Parisian change and growth.

Notre Dame is famous for its flying buttresses (exterior supporting arches that allow for a more dramatic interior) and also its massive bells. The latter played a key role in Victor Hugo's literary masterpiece 'The Hunchback of Notre Dame,' published in 1838. Notre Dame was severely damaged by a spectacular roof fire in 2019 that caused the central spire to collapse; it's hoped that the cathedral can be restored and reopened in time for Paris to host the 2024 Summer Olympics.

We'll now fly northeast to Belgium and the Netherlands, two nations that (with Luxembourg) are often called the "Low Countries." This is because much of their territory is flat and at or below sea level. In fact, about 33 percent of the Netherlands, sometimes called "Holland" in English, is below sea level, and 17 percent of land reclaimed from the sea, which is held back by dikes.

But first we'll fly over two cities in Belgium, a small nation that's about the size of Maryland. But it's home to two language groups: residents of the south (closest to France) speak a form of French called Walloon, while people in the northern half (close to the Netherlands) speak a form of Dutch called Flemish. Such language situations will become more common as we travel about Europe. Switzerland has four official languages!

Every nation has its early aviation heroes, and Belgium is no exception. Local flying lore here includes the exploits of Hélène Marguerite Dutrieu, a bicycle racer, stunt driver and pioneer female aviator. Among her claims to fame: in 1910, she became Belgium's first licensed female pilot (and the fourth in the world), the first female pilot to stay aloft an entire hour, and reputedly the first woman pilot to fly with a passenger. Nicknamed the “Girl Hawk,” Dutrieu wore the first known high fashion pilot suit, designed by the Paris couturier Bernard, and caused a minor scandal when it was revealed she flew without wearing a corset!

First we'll see Bruges, a coastal city that in medieval times served as a major port and trading center, complete with canals that led it to be called "the Venice of the North." But the channel connecting the city's harbor to the North Sea began silting up around 1500, causing business in Bruges to come to a standstill. Due to lack of development, the city's central core has remained virtually unchanged for five centuries, which means visiting Bruges today is like taking a time machine to the late middle ages.

Now we fly over Brussels, Belgium's major city and also home to the European Parliament. As such, it's the administrative center of the European Union, which consists of 27 countries. (It was 28 until the United Kingdom left last year after a prolonged debate over departure that became known as Brexit.) The European Union grew out of efforts following World War II for all the various nations to work together to prevent war and promote economic cooperation. Today, the European Union has its own
flag and many member states use a common currency, called the Euro, which was introduced in 1999.

Brussels itself boasts a long history as a center of business and commerce. Among its attractions are the city's original main square, called the 'Grand Place,' as well as a water fountain featuring a small statue of a naked young boy continuously peeing. Known as the "Mannekin Pis," the origins of this beloved monument aren't clear; one story says it memorializes a boy who put out a fire by urinating on it, saving a royal palace. No one knows for sure, but today people of Brussels celebrate the statue by dressing him in a continuous parade of outfits, turning the Mannekin Pis into everyone from Count Dracula for Halloween to Belgian inventor and musician Adolphe Sax, who invented (and gave his name to) the instrument known as the saxophone.

Equally strange is a landmark north of the city: the "Atomium," a 335-foot-high model of the structure of an iron crystal magnified about 165 billion times. Erected as part of the European Expo in 1958, it was meant to be temporary but like the Eiffel Tower, it became a symbol of the city and has remained in place. Today visitors can explore the connected globes, which contain a restaurant, exhibits, and facilities for students to sleep over.

We're landing at Brussels Charleroi Airport, the city's general aviation field, located about 20 miles south of the town. Have fun exploring Brussels, but don't be late for our next departure, when we fly further up the coast to a place where people have been ranked the world's happiest. See you then!

Resources to learn more about today's flight:

The world's most spoken languages:
https://www.fluentin3months.com/most-spoken-languages/

Palace of Versailles:
http://en.chateauversailles.fr/

History of the Eiffel Tower:
https://www.toureiffel.paris/en/the-monument/history

More about the Eiffel Tower:
https://www.history.com/topics/landmarks/eiffel-tower

Paris Point Zero:
https://www.atlasobscura.com/places/paris-point-zero

Notre Dame Cathedral:
https://www.britannica.com/topic/Notre-Dame-de-Paris

Disneyland Paris, formerly Euro Disney:

Belgium's pioneer female aviator Hélène Marguerite Dutrieu:
https://en.wikipedia.org/wiki/H%C3%A9l%C3%A8ne_Dutrieu

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11 reasons to explore Bruges:  
https://theculturetrip.com/europe/belgium/articles/11-reasons-why-you-should-explore-bruges-belgium/  

All about the Atomium:  
https://www.atlasobscura.com/places/the-atomium-brussels-belgium  

Brussels and the European Union:  
https://www.brussels.info/european-union/  

How does the European Union work?  
https://www.cfr.org/backgrounder/how-does-european-union-work  

Segment 011 / Pilot's log: Monday, June 1, 2020  

Today's Flight:  
Origin: Brussels South Charleroi Airport (EBCI), Brussels, Belgium  
Destination: Copenhagen Airport – Kastrup, Denmark (EKCH), Copenhagen, Denmark  
Distance: 469 miles  
Hello and welcome aboard today's flight. It'll take us northeast from Brussels, first over Amsterdam in the Netherlands, then across northern Germany and into Denmark. Let's go!  

Leaving Brussels, we quickly cross the border into another country, the Netherlands. (Belgium was actually part of the Netherlands until it became an independent nation in 1830.) It's the land of tulips and windmills and canals, but the Netherlands (sometimes called Holland in English) is also a modern nation with one of the world's most advanced economies. This area has been home to wealthy trading companies and banking houses that controlled a major portion of the global commerce in the days of sailing ships.
Amsterdam, the nation's major city, is a cosmopolitan place famous for its canals, its "anything goes" attitude, and for being where the family of Anne Frank was hidden from the occupying Nazis for two years during World War II. Although the family was discovered and Anne died in a concentration camp before the war's end, her diary was published in 1947 and became a classic text about the war's effect on a young girl and her family.

Like Bruges and other coastal trading cities, the oldest part of Amsterdam hosts a network of canals. Still in active use today, they host houseboats and tour cruises. With its many small bridges, as well as bicycle paths and tram lines and narrow homes with upper floors often overhanging the lower ones, Amsterdam offers an urban environment unlike any other city.

Beyond Amsterdam, we fly over land that's been reclaimed from the sea. For more than 2,000 years, the Dutch, as the residents of the Netherlands are called, have worked to push back the North Sea and turn wetlands into useable land called "polders." The famous Dutch windmills are often used to pump water to keep the reclaimed land dry. The process of reclamation continues today, although under strict environmental control.

We then cross into Germany, a country we'll pass over today but see more of later in our journey. For now, we'll fly over the northern German city of Cologne, home to the immense Cologne Cathedral, one of the largest Gothic buildings in the world. Begun in 1248, work stopped in the 1400s and it remained incomplete for 400 years. The cathedral was finally finished in 1880. Its twin spires, each 515 feet high, became landmarks for Allied bombers in World War II, when the city was almost completely destroyed.

Cologne, known as Köln in German, lies inland on the Rhine River. A bit further up river is the smaller city of Bonn, which served as the capital of West Germany after World War II. We'll learn a lot more about how Germany was divided in two when we arrive in Berlin on a future flight. Bonn is the birthplace of Ludwig Van Beethoven, a towering figure in music. He was born there in 1770, which is 250 years ago this year!

We'll continue north/northeast, next flying over the city of Hamburg, Germany's busiest cargo port and nicknamed the nation's "Gateway to the World." A key harbor and trade center for nearly 1,000 years, Hamburg was also Germany's main terminal for trans-Atlantic passenger liners bound for America. Today, Germany's second-largest city is a popular destination for cruise ships, with passengers eager to explore the city's many cultural attractions.

As we travel about Europe, it's hard not to bump into big names in the arts and culture. Hamburg, for instance, is the birthplace of Johannes Brahms, another famous 19th century composer. More recently, it hosted early concerts of the Beatles, whom we met earlier flying over Liverpool. Hamburg also boasts the world's largest model railroad display, the Miniatur Wunderland, which includes a working model of the city's airport, complete with jumbo jets landing and taking off. There's a video you can check out in the links.

Continuing to the northeast, we'll soon cross from Germany into the part of northern Europe that's home to the Nordic nations: Denmark, Norway, Sweden, and Finland. (Sometimes Iceland is included...
due to its historic ties to Norway.) We'll look at these nations, sometimes generally referred to as "Scandinavia," in more detail on our next flight. But for now we'll point out that residents enjoy a high quality of life, with the Nordic nations often ranking at the top of "happiness" studies. Why do you think this is so? There are links below to help explore this question.

Our destination today is Copenhagen, Denmark's capital and largest city. Known as one of the most bicycle-friendly cities in the world, Copenhagen has a long history of military battles from the middle ages all the way to World War II, when the German army occupied the nation for more than five years. Today it's the prosperous business center of a nation that, among many accomplishments, is where Legos were invented.

In landing at Copenhagen Airport, we'll fly over Øresund Bridge, an enormous new span linking Denmark with neighboring Sweden. The 10-mile long road/railroad crossing, completed in 2000, consists of a long bridge with an enormous cable-stayed main span, an artificial island, and tunnel for the part closest to Denmark so ships can pass with no height restrictions.

The island where the bridge turns into a tunnel is completely manmade, and is the site of an ongoing study to see how nature establishes itself on new land. Although the island carries a busy highway and railroad, the land is off limits to visitors so scientists can study what plants and animals appear naturally, and in what order. The island is known as Peberholm (or Pepper Island), because it was created right next to a larger natural island called Saltholm. Can you see the connection of the names?

Landing in Copenhagen, we look forward to resting up for our next leg: a swing around Scandinavia, where we'll learn a lot more about this beautiful and interesting part of the world. See you next time!

**Resources to learn more about today's flight**

The Anne Frank House:  
https://www.annefrank.org/en/

All about Amsterdam:  
https://www.britannica.com/place/Amsterdam

Reclaiming land in the Netherlands:  
https://en.wikipedia.org/wiki/Land_reclamation_in_the_Netherlands

Visiting Cologne Cathedral:  
https://www.cologne.de/what-to-do/the-cologne-cathedral.html

Ludwig van Beethoven's birth in Bonn:  

Welcome to Hamburg:  
https://www.hamburg.com/visitors/
Segment 012 / Pilot's log: Thursday, June 4, 2020

Today's Flight:

Origin: Copenhagen Airport – Kastrup, Denmark (EKCH), Copenhagen, Denmark

Destination: Helsinki-Malmi Airport (EFHF), Helsinki, Finland

Distance: 1,025 miles

Today's flight takes us from Copenhagen, over Norway and Sweden, to Finland. Along the way we will see Norwegian fjords and mountains, the Swedish lake Vänern (the largest lake in the European
Union), and the Åland Islands, part of the World's largest archipelago stretching across the Gulf of Bothnia between Sweden and Finland.

Leaving Denmark, we'll fly over the city's famous Tivoli Gardens Amusement Park. Opened in 1843, the compact park features rides and attractions set in carefully landscaped grounds. It's the ancestor of all of today's theme parks. In fact, a 1951 visit by Walt Disney inspired creation of the first Disneyland in California.

Speaking of fun: Denmark and the other nations in this area often place at the top of studies ranking overall "happiness" of people around the world. Rating a quality such as "happiness" can be a challenge, as happiness means different things to different people. But what if you tried to measure the many elements that make up an overall quality of life? You might include things such as life span, financial security, good health, lack of stress, freedom to live as you please, and so on. When that's done, the Nordic countries of Denmark, Norway, Sweden, and Finland rank very high.

Why? Many observers point to what's called the "Nordic Model" of society. Greatly oversimplified, it means that government plays an active role in providing a high level of services to all citizens, including education, health care, retirement pensions, and much more. However, tax rates on people and businesses can be very high. Businesses are still privately owned and function in a free market economy, but the government plays a major role in distributing benefits to all citizens.

There's more about the "Nordic Model" and happiness ratings in the links. How is this model different from government in other places, such as the United States? It's important to note that the world is home to many forms of government that are always evolving. One of the great things about traveling is learning about other ways of doing things and seeing them in practice.

As we fly up the southwest coast of Norway, a country of about 6 million people. In Norway, the landscape can help you understand history. Along the coast, surrounded by mountains, it's no surprise that for centuries, Norwegians looked to the sea. A thousand years ago, in the era of the Vikings, they sailed west, as far as Iceland, Greenland, and even North America. Even today, few roads pierce the mountainous interior of Norway. It's still easier to get around by boat, or now by air. And speaking of water: Fjords (pronounced "fee-YORDS") are a hallmark of the Norwegian coast. These steep-walled valleys often stretch for many miles, bringing the sea deep into the mountains. Today's flight will follow Lysefjord, which is highlighted by dramatic "Pulpit Rock," which rises nearly 2,000 feet above the water.
Norway's aviation pioneers include Gidsken Nilsine Jakobsen, an early female pilot who in 1932 became the first woman to head an airline in Scandinavia. As we cross from Norway into Sweden, we'll tip our wings in honor of another flight legend, Swedish pilot Ivar Sandström, one of the nation's earliest aviators. A Navy pilot, he was tragically lost in 1917 when his open cockpit plane turned upside-down and he fell to his death. Ironically, the pilot-less plane crashed in a cemetery.

We're now in Sweden, a nation a little bit larger in area than the state of California. Like Norway, it has an advanced economy and its residents enjoy a high standard of living. A nation of 12 million people (including members of the iconic pop group ABBA), about 2/3 of Sweden is covered by forest, which is roamed by 400,000 moose. Sweden also boasts the largest freshwater lake in the European Union: Lake Vänern, which is about one-quarter the size of the state of New Hampshire. You can learn a lot more about Sweden in the links below.

Finland, a country on the fringe of Northern Europe with a population of about 5.5 million, has a long and eventful history, dating back to the Iron Age and the invasion by Sweden in the 12th century. Finland remained part of Sweden until 1809, when - as part of the Napoleonic wars - the settlement of a conflict between Sweden and Imperial Russia led to Finland becoming an autonomous "Grand Duchy" of Russia. Later, in the aftermath of the Russian revolution in 1917, the country declared itself independent.

We will be landing at the Helsinki-Malmi airport. This is the old airport of the capital, built in the late 1930s and officially inaugurated in May 1938 in anticipation of the 1940 Olympic Summer Games that were meant to be held in Helsinki, but were canceled because of World War II. The airport served as a military airbase during the war. Helsinki-Malmi remains the second busiest airport in Finland, but is now threatened by the city's housing development plans, despite the majority of the citizens of Helsinki resisting such plans.

The airport's terminal is the original building from the 1930s, and is one of the few remaining examples of pre-war airport terminals. Architecturally it represents the style of functionalism. The unfortunate situation about the airport's threatened closure, apart from the disruption it will cause to pilot training and general aviation, is that it has been recognized as a historically and culturally significant landmark by the Finnish Heritage Agency, the World Monuments Fund, and others. The pan-European cultural heritage organization Europa Nostra in 2016 selected the airport as one of the seven most endangered cultural heritage sites in Europe.

An interesting incident involving the airport took place in 1987, when a German teenager named Mathias Rust took off in a small Cessna 172 with a declared flight plan to fly to Stockholm. Instead, he turned around and flew to Moscow, managing to avoid all the Soviet air defences. He landed in the Red Square, causing a huge scandal. The airport terminal has a plaque commemorating the event, now dubbed the "peace flight" (Rust explained that his intentions were to ease the tensions between the East and the West).

Helsinki's main international airport, named Helsinki-Vantaa, was built for the 1952 Olympics that were held in Helsinki. It is the operational hub for Finnair, the national airline. Finnair is one of the
oldest still operating airlines, founded in 1923. The airline was called "Aero" until the name was changed in 1968. Currently only KLM, Avianca, Quantas, Aeroflot, and Czech Airlines are older than Finnair - Czech Airlines by less than a month. Incidentally, the first aircraft to land at the new airport in 1952 were DC-3s, just like the one we are using on our round-the-world flight.

Related to our adventure's theme of long-distance flying, a couple of people from the annals of Finnish aviation are probably worth mentioning here: Captain Wäinö Bremer flew a single-engined open-cockpit Junkers A.50 Junior in 1932 from Helsinki to Cape Town, South Africa and back. Bremer was also an accomplished athlete and a silver medalist at the 1924 Chamonix Olympic Winter Games. Mrs Orvokki Kuortti participated in the England-Australia air race in 1969 flying a Piper Cherokee Arrow, and finished as the fastest female pilot. She flew in other races as well, and among other things was the first Finnish helicopter pilot. Both the Junkers Junior and the Piper Arrow are now preserved in Finland.

About Helsinki: The city of Helsinki (Swedish name "Helsingfors") was founded in 1550 by the Swedish king Gustav Wasa, but did not become the capital until 1812, after Finland became part of Russia. The former capital was the city of Turku, on the Western coast of the country, closer to Sweden. Turku (its original Swedish name is "Åbo") is the oldest town in Finland, and although the exact year of its founding is not known, it is mentioned in a Papal document in 1229. Notable landmarks in Turku include a castle and a cathedral originally dating back to the late 1200s.

Helsinki's architecture, specifically in the downtown area, reflects the neoclassical 19th century architecture of Saint Petersburg, and before the collapse of the Soviet Union the city was frequently used to film movies depicting events in the hard-to-access Eastern neighbor. Examples of such movies are Doctor Zhivago (1965), Reds (1981) and White Nights (1985). One of the most distinctive landmarks in downtown Helsinki is a large neoclassical cathedral built in the mid-1800s.

Geographically speaking Helsinki was built on a peninsula and several hundred islands on the coast of the Baltic Sea (Finnish: "Itämeri"; Swedish: "Östersjön"), and historically has been called the "Daughter of the Baltic". The capital region, consisting of Helsinki and three other immediately surrounding municipalities of Espoo, Vantaa and Kauniainen, has about 1.2 million inhabitants. Most of the population of the country is concentrated in the south, with the northern parts being very sparsely populated. Did you know that about one third of the country, lengthwise, is above the Arctic Circle? This means that people living there have part of the year when the sun never sets, and part when it never rises!

Outside the Helsinki harbor lies the coastal fortress Suomenlinna (Swedish name: "Sveaborg"), built on eight separate islands. Construction of the fortifications began in 1748 while Finland was still part of Sweden. In the 1920s and 1930s the Finnish State Aircraft Factory ("Valtion Lentokonetehdas", in Finnish) was based in Suomenlinna and built aircraft for the Finnish Air Force. Today the islands are mostly an artist colony and a very popular tourist attraction, but also house the Finnish Naval Academy. One of the interesting things to see in Suomenlinna is the preserved last submarine of the Finnish Navy, CV 707 Vesikko, launched in 1933. Vesikko was built in Finland, at a shipyard in Turku, but the design also served as the prototype of the German type II U-boat. During World War II, the Finnish Navy operated a total of 5 submarines, the Vesikko being the most modern.

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Note how we have given both Finnish and Swedish names to places mentioned in this article. This is because Finland is officially a bilingual country. Both Finnish and Swedish are used, and indeed are required to both be used in official government documents and communication. Compare this to, say, Quebec in Canada, where both English and French are official languages.

Resources to learn more about today's flight:

Tivoli Amusement Park:
https://www.atlasobscura.com/places/tivoli-gardens

All about Ebeltoft, Denmark:
https://en.wikivoyage.org/wiki/Ebeltoft

Pros and Cons of the Nordic Model:

United Nations World Happiness Report:

Norway Country Guide:
https://www.lifeinnorway.net/about-norway/

About Norway's Sovereign Oil Fund:

Visiting Norway's Lysefjord:
https://www.fjords.com/the-lysefjord/

The Flying Frenchies:

Sweden nation profile:

25 facts about Sweden:
https://www.swedishnomad.com/interesting-facts-about-sweden/

Lake Vänern
https://www.visitvarmland.se/en/lake-vanern

History of Åland
https://www.visitaland.com/en/good-to-know/history/

All about Finland
https://finland.fi/

Arctic Circle
https://en.wikipedia.org/wiki/Arctic_Circle
Segment 013 / Pilot's log: Monday, June 8, 2020

Today's Flight:

Origin: Helsinki-Malmi Airport (EFHF), Helsinki, Finland

Destination: Berlin Tegel Airport (EDDT), Berlin, Germany

Distance: 1,577 miles

Today we fly into the heart of European Russia, as far as the capital city of Moscow, and then head west all the way to our destination of Berlin, Germany. It's more than 1,500 miles, so let's get started.

We fly east from Helsinki and cross the border into Russia, the world's largest nation in terms of land area. At 6.6 million square miles, Russia is roughly twice the size of the United States. Today called the Russian Federation, this massive nation of 144 million people stretches across about 5,500 miles and encompasses 11 time zones. It goes all the way out to the Pacific Ocean and the Bering Sea, where it borders the U.S. state with Alaska. So we're actually neighbors!

Russia's history is long and complicated. What we now call the European part of Russia emerged from wars more than 1,000 years ago with a people called 'the Rus' settling the area between Scandinavia in the north and the Byzantine Empire in the south. Christianity was adopted in 988, and Moscow became a power center as headquarters of the Russian Orthodox Church. During the medieval era, for more than 250 years power was consolidated in the Grand Duchy of Moscow, ruled by a group of families...
known as the Grand Princes. These were succeeded by more autocratic figures in the 1500s such as Ivan III, who tripled the size of Russia and laid the foundations of the modern state, and Ivan IV (known as Ivan "the Terrible"), the first ruler to be crowned as "Czar," or king-like monarch, a term derived from the Roman "caesar."

The Romanov family took control of Russia in 1613 and ruled as Czars for the next three centuries. Under them, the Russian Empire continued as a land where a very wealthy aristocracy exercised almost total control of a large and impoverished peasant population. Efforts were made to establish connections with European nations to the West, most notably the founding of St. Petersburg in 1703 by Peter the Great. The Empire survived great threats, including Napoleon's failed attempt to conquer Moscow in 1812, a campaign depicted in Russian composer Tchaikovsky's '1812 Overture,' often heard at American 4th of July concerts. At the same time, the Romanovs gradually extended Russian influence east into Asia, taking control of large areas spanning thousands of miles across the continent, and all the native peoples living there. In that sense, Russia and Asia have a similar history to how Europeans settled North America, although with Russia the process was from West to East.

Expansion brought more conflict. The Romanov grip on power was greatly weakened in 1905, when Russia lost an ill-advised war with Japan, just then emerging as a modern nation. (The treaty ending this war was signed in Portsmouth, N.H.!) The turmoil of World War I led to the Russian Revolution, in which the Romanovs were overthrown in favor of Communist system of government championed by revolutionary Vladimir Lenin. Russia soon became the leading state in the Union of Soviet Socialist Republics, a group of states with communist/socialist style governments that prevailed for most of the 20th century. Under Josef Stalin, Russia and the United States were allied against Hitler's Germany during World War II, known to Russians as 'The Great Patriotic War.' After that, Russia and the West turned into great rivals during what became known as 'The Cold War,' with each side vying for supremacy until the Soviet Union disintegrated in 1991 in favor of reforms to allow more personal freedom. There's a lot more about Russia's sprawling history in today's Pilot Log links.

Russia is the first country on our trip where a different alphabet is used. Called the "Cyrillic" alphabet, it shares a common ancestor in the Roman alphabet used in English, but also blends in letters from other sources, including the Greek alphabet. Some letters are the same as ones we use, but have different sounds: in Russian, the letter "P" is actually our "R" sound, "C" is our "S" sound, and "H" is our "N" sound. So PECTOPAH is Russian for "RESTAURANT."
Our route today takes us over Russia's two great cities: St. Petersburg (a short flight from Helsinki) and then Moscow. Along the way, we'll meet some of the great personalities of Russian culture and science. St. Petersburg, located on Russia's short Baltic Sea coastline, served as the Russian Empire's capital and home of the Romanov czars for more than 200 years, from 1712 to 1918. It was founded in 1703 (making it younger than Boston and New York City) as a "window on the West" by Peter the Great to strengthen ties with the great European nations of the time. The Romanovs gradually built the city into a showpiece of aristocratic ambition, with immense palaces and churches. Lined with canals, the city was the center of the Russian intelligentsia in the 19th century. Famous author Fyodor Dostoyevsky set his great novel 'Crime and Punishment' in the streets and apartment houses of St. Petersburg.

In World War I, Czar Nicholas II changed the city's name to the more Russian 'Petrograd.' After the Russian Revolution, it was renamed 'Leningrad' after the leader, who moved the capital back to Moscow in 1918. As Leningrad, the city became the target for an extended siege during World War II, when German troops cut off the city from the rest of Russia for three years, from 1941 to 1944. More than 1 million trapped citizens died during the siege. But the city never surrendered, its spirit symbolized by Russian composer (and Leningrad resident) Dmitri Shostakovich's Symphony No. 7, a musical call to arms played in the bombed-out city by starving musicians. Smuggled to the West, it became a symbol of resistance against the Nazis. Shostakovich, wearing a firefighting helmet, made the cover of Time magazine. With the collapse of the Soviet Union in 1991, the Russian government returned the original name of St. Petersburg, although Moscow remained the capital.

For nearly a thousand years, Moscow has been the center of Russian life and culture. Today the Moscow area is home to about 20 million people, making it the largest city in Europe. At the heart of Moscow lies the Kremlin, originally a fortress on the Moscow River that over many centuries became an administrative center and a symbol of the Russian nation. A walled complex of spectacular churches and ornate halls, the Kremlin is next to Red Square, a large public space dominated by the rounded domes of St. Basil's Cathedral.

One thing about Moscow, and most of Russia's vast interior, is that it's so far north, and far from the moderating influence of any ocean, that winters tend to be long and cold and snowy. But that doesn't affect the nation's taste for ice cream, which remains popular all year round, even in the dead of winter. Why? Because many Russians believe that the best way to feel warmer is to eat something cold. This different way of thinking is worth keeping in mind when you consider Winston Churchill's famous description of Russia: "a riddle wrapped in a mystery inside an enigma."

As we head west, we'll fly over the nation of Belarus, an inland nation with a total land area of approximately 80,000 square miles, or about the size of all six New England states together. Under control of Russian czars in the 19th century, after the Russian Revolution of 1917, Belarus spent seven decades as a constituent republic of the Soviet Union. It was especially hard hit in World War II during the battle between Germany and the Soviet Union, when more than a quarter of the nation's population perished, including nearly all of the nation's substantial Jewish population. When the USSR dissolved in 1991, Belarus declared independence, but in 1994 came under the control of Alexander Lukashenko, an authoritarian ruler who remains in charge today, making him Europe's currently longest-serving head of state. To learn more about Belarus, check out the links at the end of the pilot's log.
And just to show that barriers in aviation are broken all the time: the first known around-the-world
flight by an all-Belarusian crew was made only in 2018, in a Cessna 182 Skylane modified to hold
extra fuel. Flying easterly first over Russia and then the United States, their 30-day, 20,000-mile
odyssey involved 10 stops and passed over our home state of New Hampshire before crossing the
Atlantic, just like we did!

Belarus is culturally similar to European Russia, and so is often overshadowed by its gigantic neighbor
to the east. During the Soviet era, the central government in Moscow installed many ethnic Russians in
positions of power so that Russian culture and language would predominate. As we continue flying
east, the same practice was followed in our next nation, Lithuania, one of three smaller countries often
called the "Baltic States." Lithuania, along with Latvia and Estonia, were forced to be part of the Soviet
Union during World War II, and afterwards were governed for decades as client states of Moscow.
Their independence in 1991 helped lead to the break-up of the Soviet Union. Since then, each has
turned to the West, joining the North Atlantic Treaty Organization, the European Union, and embracing
a free market economy.

With the three Baltic countries, we see remnants of how much of Europe for centuries was divided into
many smaller kingdoms and principalities. Boundaries were always changing as battles were fought
and territories won or lost. At one point in the Middle Ages, the Grand Duchy of Lithuania
encompassed nearly half of Europe! Over time, and especially in the 19th century, culturally similar
states gradually came together to form larger nations we know today, such as Germany and Italy. But
some smaller ones, such as the three Baltic states, stayed out of that process, making Europe home to a
number of small but proud nations, in some cases smaller than our own state of New Hampshire.

Still, like most nations, the Baltic States have their early aviation heroes. One famous pair of aviators
was Steponas Darius and Stanley Girėnas, two Lithuanian-American World War I veterans who in 1933
attempted to establish a new world's record for distance in a single-engine aircraft by flying their
specially outfitted plane, the Lituanica, 4,500 miles nonstop from the U.S. to Lithuania. Darius was
famous in the 1920s not only for his piloting, but also for introducing basketball to Lithuania, which
going on to become the national sport. Departing from New York, the pair almost made it, but the
Litunanica crashed under mysterious circumstances in Germany about 700 miles from their destination.
For a time, the pair were memorialized on Lithuanian banknotes.

Our next country, Poland, has a long history of coping with armies and military campaigns due to its
central location in Europe and its flat geography along the nation's north coast. It was Hitler's
unexpected invasion of Poland in 1939 from the west that sparked World War II. But Poland has a long
and proud history of innovation and accomplishment. In the early 1500s, Polish astronomer Nicholaus
Copernicus was among the first scientists of the Enlightenment to conclude that the Earth revolved
around the Sun (instead of the opposite), and that Earth was one of several planets. In first half of the
19th century, Polish composer Frederic Chopin wrote music that established the piano as a mainstay of
classical music and which is still played today.

Warsaw, which we're flying over, has been Poland's main urban center and capital since the 16th
century. It's a huge city, today home to nearly 3.1 million people, but it was almost completely
destroyed in the latter stages of World War II, when the advancing Soviet Army caused Hitler to order
the city razed to the ground. Poland was among those nations that took the brunt of Hitler's ambitions to remake Europe as a German-ruled empire. Nearly all of Poland's 3 million Jews died in Nazi concentration camps, while many ethnic Poles were deported and used as slave laborers. These stories of these tragic times is preserved in the ruins of the concentration camps, which still stand today as a silent testament to the Holocaust.

After World War II, Poland remained under Soviet control while the nation slowly recovered. Economic stagnation led to a "Solidarity" labor rebellion starting in the late 1970s. The Catholic Church, a powerful force in Polish life, added strength to the growing protests in 1978 with the election of Pope John Paul II, a Polish archbishop and outspoken critic of Soviet rule. Poland regained independence in 1989 and has since implemented free market economic reforms; in 2004 the nation joined the European Union.

Poland's legendary aviators include Capt. Stanislaw Jakub Skarzynski, who shocked the world in 1933 by flying a small Polish-built touring plane, the RWD-5bis across the southern Atlantic from Senegal to Brazil. The flight took 20 hours 30 minutes (17 hours 15 minutes over the ocean). Capt. Skarzynski crossed 2,225 miles, establishing a World Record for a Category 2 tourist plane (weight below 1000 lbs), and he did it all while wearing a formal dress suit (with hat) rather than the typical pilot outfit of the time. The RWD-5bis remains the smallest airplane ever to have flown the Atlantic non-stop on this route.

Continuing west, we fly over the forests and fields of Poland's central plain until crossing the border into Germany, where we quickly reach Berlin, the nation's capital and largest city. As the capital of a nation defeated in two major 20th century wars, Berlin's recent history is a complicated puzzle of competing ideologies, destruction, and eventual renewal. For centuries, it's been a world capital of culture, commerce, and achievement. And for aviation enthusiasts, it's notable as the site of history's first large-scale air-only military action: the Berlin Airlift 1948-49.

To understand Berlin's recent history: after World War II, Germany was divided by the Allies into four occupation zones: America, French, British, and Russian. The Russians, who had reached the German capital of Berlin first, assumed control of the eastern part of Germany, which includes all the territory around Berlin. The city of Berlin itself, however, was divided among the four Allies into quadrants, with the whole city itself surrounded by the eastern part of Germany under Russian control.

At the time, Russian dictator Josef Stalin began imposing Soviet-style government on eastern Germany and its portion of Berlin, instead of the open-style democracy favored by the Allies. This caused great tension in war-torn Berlin, where the citizens were not sure what kind of government would prevail. Finally, Stalin closed off access to East Germany (and the entire city of Berlin) in an attempt to win firm control for the Soviet way.

With road and rail links severed, residents of the non-Russian parts of Berlin faced a dire lack of supplies. To aid them in standing up to the Russians, the U.S. and Great Britain organized a campaign to deliver by air massive quantities of supplies on a level that had never been attempted before. Known as the Berlin Airlift, the Allies staged round-the-clock convoys of flights to bring the citizens of Berlin everything from candy to coal. The effort went on from June 1948 to September 1949, when Stalin
reopened the borders and the blockade ended.

The conflict didn't stop there. The Soviet part of Germany because East Germany, a totally separate nation from the rest of Germany controlled by the Allies, which became West Germany. In Berlin, the Soviets prohibited people from their sector of the city from freely traveling into the Allied portions. To stem the tide of people abandoning their part of the city, in the early 1960s the East German government erected a guarded concrete barrier. The Berlin Wall became a symbol of the clash between Soviet-style authoritarian rule and more open Western democratic free enterprise. The wall only fell when East and West Germany were finally reunited in November 1989 as the Soviet Union was disintegrating.

All of this took place in the city we're now circling over. For aviation enthusiasts, Berlin is noted for several historic airports. Easily spotted from the air is Templehof Airport, which Hitler envisioned as Berlin's major international gateway, erecting a monumental terminal and hangars in the 1930s; the field was closed to air traffic in 2008, but the buildings remain. Tegel Field, a relic from the Berlin Airlift, continues to serve the city, as does Schönefeld Field. All existing Berlin airports will eventually be closed following the 2020 opening of a brand new international airport, Berlin Brandenburg, south of the city.

So welcome to Germany! You can find out a lot more about this nation, which boasts one of the world's largest economies and some of the world's best beer, in the links below. For now, let's prepare for our landing at Tegel Airport and prepare to explore one of the world's great cities.

Resources to learn more about today's flight

10 local foods to try in Helsinki
https://theculturetrip.com/europe/finland/articles/10-local-foods-you-need-to-try-in-helsinki/

Basic info about Russia
https://www.britannica.com/place/Russia

History of St. Petersburg
https://www.expresstorussia.com/guide/petersburg-history.html

St. Isaac's Cathedral in St. Petersburg
http://www.saint-petersburg.com/cathedrals/st-isaacs-cathedral/

The Church of the Savior on Blood
https://en.wikipedia.org/wiki/Church_of_the_Savior_on_Blood

Seward's Folly, or the U.S. purchase of Alaska
https://www.history.com/this-day-in-history/sewards-folly

General guide to Moscow
https://www.travelandleisure.com/travel-guide/moscow

--- Page 47 ----
The Kremlin and Red Square
https://whc.unesco.org/en/list/545/

12 facts about St. Basil's Cathedral
https://www.mentalfloss.com/article/76266/12-facts-about-saint-basils-cathedral

Russians and ice cream in winter
https://www.rbth.com/arts/2015/02/27/the_way_to_a_russians_soul_is_through_the_freezer_44043.html

The Moscow Metro

Czar Nicholas II's All-Russian Air-Club

All about Belarus:
https://www.britannica.com/place/Belarus

The Baltic nations:
https://en.wikipedia.org/wiki/Baltic_states

In Vilnius: the Frank Zappa Memorial
https://www.atlasobscura.com/places/frank-zappa-memorial

The mystery of the Lituanica

All about Poland
https://kids.nationalgeographic.com/explore/countries/poland/

About Polish astronomer Nicholas Copernicus
https://www.britannica.com/biography/Nicolaus-Copernicus

The record-breaking flight of Poland's Capt. Skarzynski
http://avstop.com/history/aroundtheworld/poland/rwd5.html

Poland and the Soviet Union in World War II

11 historical moments that shaped Berlin, Germany
https://theculturetrip.com/europe/germany/articles/12-historical-events-that-shaped-berlin/

The story of Templehof Airport
Segment 014 / Pilot's log: Monday, June 15, 2020

Today's Flight:

Origin: Berlin Tegel Airport (EDDT), Berlin, Germany

Destination: Interlaken Airport (LSMI), Interlaken, Switzerland

Distance: 845 miles

Today's flight takes us from Berlin south in the heart of Germanic Europe. We'll fly south over cities including Vienna, the longtime former capital of the Austro-Hungarian Empire, and the west over the scenic Austrian Alps and into Switzerland, where we'll land in the mountain valley town of Interlaken. Get ready for some of the most spectacular scenery we've encountered so far!

In leaving Berlin, let's take a moment to remember the Berlin Airlift, which happened here at Tegel Airport as well as Berlin's Templehof Airport in 1948 and 1949, just after World War II ended. Berlin was a divided city, with the Soviets blockading the sections controlled by the U.S., Britain, and France. The situation was dire, and giving in would have forced millions of Berliners to live under Soviet control. To keep Berlin free, the U.S. and Britain teamed up to stage a massive year-long airlift that brought essential supplies to the city and its residents. Thousands of U.S. pilots and support personnel were sent to Germany to participate in this effort, which involve round-the-clock cargo flights under dangerous conditions. The campaign saved Berlin, and helped check post-war Soviet aggression.

In delivering cargo to the stricken city, U.S. pilots began giving their candy rations to children outside the airport. This developed into a full-scale effort to drop packages of candy via parachute from cargo planes as they passed low over the city. Today, older people in Berlin still recall the "candy bombings" of their childhood. At the Aviation Museum of New Hampshire, we were pleased to recently re-enact
the candy bombing last year in honor of the 70th anniversary of the Berlin Airlift. The reenactment was also a way to honor U.S. Air Force Cpl. Ralph Dionne of Nashua, who served as a flight engineer during the Berlin Airlift and who shared recollections of his participation. You can see video of our reenactment and Cpl. Dionne's remembrances using the links below.

Flying south, we'll pass over two of the main cities of eastern Germany. Each has an important claim to international culture. Leipzig, a city of about 600,000 people, developed early at the intersection of ancient trade routes. It's home to the St. Thomas School, a boarding school founded by the Augustinians in 1212 and one of the oldest schools in the world. As the school's music director from 1723 to 1750, composer Johann Sebastian Bach produced an enormous quantity of music that many believe is the most important and influential ever written. Today, Leipzig is an important economic center, but also but a center of independent music, hosting the world's largest Goth music festival every year.

Not far to the east of Leipzig is Dresden, home to 550,000 people. Most German cities suffered major damage during World War II, but Dresden is noted for being completely wiped off the map in a single bombing raid. On Feb. 12-13, 1945, allied bombers dropped explosives designed to start fires. These quickly grew into a "firestorm," an enormous tornado of flame that consumed everything flammable, leaving the city a moonscape of rubble. It also used up all oxygen when it burned, causing people trapped in shelters to suffocate. It's estimated that up to 25,000 people died. One of the few survivors of the Dresden firestorm was Kurt Vonnegut, a young U.S. soldier and German prisoner of war who took refuge deep underground in a meat storage locker. His book about the Dresden firestorm, Slaughterhouse Five, became a best-selling novel in the late 1960s.

We now fly south, crossing the border into the Czech Republic and flying over Prague, the nation's capital and one of the great historic cities of Europe. Prague got its start as the site of Prague Castle, parts of which date from more than 1,300 years ago. Greatly enlarged over the centuries, and located on a commanding bluff overlooking the Vlatava River, the castle still dominates the city today. In medieval times, was the capital of the Kingdom of Bohemia and the main residence of several Holy Roman Emperors, most notably Charles IV, who transformed Prague into an imperial capital. At the time, Prague was the largest city in Europe after Rome and Constantinople. In later centuries, it remained a key city of the Vienna-based Hapsburg monarchy and its Austro-Hungarian Empire.

Like other middle European cities, Prague developed as a trade center near a spot where the Vlatava River could be forded. Over the centuries, several bridges were built; the most enduring is Charles Bridge, named after Charles IV, who was responsible for its construction. Charles IV personally laid the first foundation stone for the bridge on July 9, 1357 at 5:31 a.m. The exact time is known because the palindromic number "135797531" was carved into the Old Town bridge tower; the number was chosen by the royal numerologists as the most auspicious time for the project to start. The bridge, for 500 years Prague's only river crossing, remains in use today; its 660th anniversary in 2017 was celebrated by a Google doodle.

Although at the center of centuries of European turmoil and war, much of Prague's ancient streets and buildings has survived intact. Today, it's possible to visit sites such as the city's old Jewish cemetery, which dates from the 1400s and was in use for several hundred years. When space ran out, layers were

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added to accommodate more burials; eventually, as many as 12 layers were put in place, causing the
cemetery to rise several yards higher than the surrounding neighborhood and requiring retaining walls
to hold it in place. Prague remains crowded with the treasures of centuries of accomplishment:
cathedrals, palaces, and neighborhoods of narrow old streets. Although the city was damaged in World
War II bombing, much of Prague was spared destruction.

Prague, by the way, is the home of "Good King Wenceslaus" of the popular Christmas carol.
Wenceslaus I, who was actually a duke, was born here in 910 and ruled the lands of Bohemia as a
young man until he was murdered by his brother, Boleslaus the Cruel, in 935. His tragic death made
Wenceslaus a martyr and saint of the Catholic Church, but more than 1,000 years later this obscure
ruler remains familiar to all mostly due to a holiday tune.

We now fly south to a Vienna, the capital of Austria and a major European city with a population of 2.6
million people. Two things a visitor to Vienna should understand right at the start: for centuries it was
imperial capital to the sprawling Austrian Empire, which covered much of central and eastern Europe
and was one of the world's most important nation-states until World War I. Also, for a very long time,
Vienna was the unchallenged capital of the music world, with an aristocracy and art-loving merchant
class that supported the work of Mozart, Beethoven, Schubert, Brahms, Mahler, and many other great
composers and performers. Both of these threads are woven into today's Vienna: a grandly scaled city
filled with world-class palaces, enormous museums, spectacular theaters, ornate cathedrals, and
spacious boulevards all worthy of a seat of empire, which it once was.

With Vienna, we again make contact with our friends the Romans, whose settlement on the banks of
the Danube River 2,000 years ago served as a "frontier town" and bulwark against Germanic tribes to
the north. Vienna emerged as the main center for the Holy Roman Empire, established in 800 by
Charlemagne and Pope Leo III and which controlled much of central Europe for more than 1,000 years,
until it was dissolved in 1806. From 1440, the empire was ruled by the Hapsburg family in Vienna.
Over the centuries, the family erected an complex of palaces and administrative buildings that
culminated in the Hofburg, an enormous central palace and elaborate grounds worthy of one of
Europe's great ruling dynasties.

As a world capital, Vienna was a target for rival regimes. The city was besieged twice by armies of the
Ottoman Empire, its neighbor to the south, but never fell. After Napoleon's military campaigns roiled
Europe, peace treaties were signed in 1815 in the Congress of Vienna. But the climax of Vienna's status
as a center of world power came in the 19th century, when the Hapsburgs presided over the Austrian
Empire (later known as the Austro-Hungarian Empire), a multi-ethnic kingdom that encompassed 50
million people, all ruled from Vienna. During this time, the Hapsburgs replaced the city's old walls with
grand boulevards, creating dramatic vistas and bolstering Vienna's reputation as one of the world's great
cities. At the dawn of the 20th century, the city remained in the intellectual forefront, home to new
movements in music and the visual arts, and also to Sigmund Freud's pioneering work in the new field
of psychology. It has also given the world a new dance, the "waltz," popularized among the ballroom-
loving aristocracy by the music of Johann Strauss and his son, Johann Strauss Jr.

All that changed with World War I, in which Austria (allied with Germany) was defeated. The empire
was broken up into many smaller nations and the ruling Hapsburgs deposed in favor of an elected
government. But city they built, now capital of a much-smaller Austria, endured. It survived World War II largely intact, emerging as a phenomenally preserved example of Old World elegance. Today, as the headquarters of the oil cartel OPEC, it remains a world capital of sorts. And the Hapsburgs are still around, too: they fought against Germany when the Nazis occupied Austria during World War II, and later became early advocates for a unified Europe. Longtime patriarch Otto Von Habsburg, crown prince and son of the last Emperor Charles I, died in 2011 at age 98. The current heir to the Habsburg throne is Ferdinand Zvonimir von Habsburg, a popular European race car driver and motorsports competitor.

After reaching Vienna, we turn west and begin flying through the remarkable area where the green fields of central Europe meet and mingle with the dramatic Alps, the continent's highest mountain ranges and one of the Earth's great landscapes. Flying along the border of Germany and Austria, we'll pass over storybook vistas of green valleys and white snowy mountain peaks that seem made in a dream. But they're actually made deep underground: the Alps are the result of an ongoing collisions of crustal plates that cover the Earth's surface. (Specifically, in this case, the northward-moving African plate is bumping into the staying-in-one-place Eurasian plate.) The peaks of the Alps are quite pointy because geologically, they're brand new: they started taking their present form only about 2.6 million years ago, so there's been virtually no time to erode like, for example, New Hampshire's White Mountains, which were formed about 100 million years ago. The Alps, with their deep valleys and snow-capped peaks, are so scenic that they're familiar to people worldwide as the settings for films such as 'The Sound of Music' (1965). Today, the gigantic Bollywood film industry often uses the European Alps for photogenic backgrounds not available in India.

We follow the northern foothills of the Alps to the imposing castle of Neuschwanstein, located just over the border from Austria in Germany. This enormous hilltop mansion was erected in the second half of the 19th century by Ludwig II, the young ruler of Bavaria who was fascinated by medieval legends and obsessed by the romantic operas of composer Richard Wagner. Calling it Neuschwanstein after a nearby ruined medieval fortress, Ludwig II pursued the vision of his dream castle, even as it drove him into bankruptcy, causing problems for the Bavarian state. Ludwig was finally removed from power in 1886 on the basis of his irrational behavior, and died shortly thereafter under mysterious circumstances, with Neuschwanstein still incomplete. Eventually finished according to his design, the castle immediately became a popular tourist attraction, bringing in enormous revenue for the state since the 1890s. Its remote location helped it survive World War II intact, although the Nazi had planned to destroy it in advance of the Allied invasion. Neuschwanstein went on serve as the model for "Cinderella's Castle" at the heart of all of Walt Disney's theme parks. It's also had a movie career, playing a major role as the castle of "Baron Bomburst" of the mythical nation of Vulgaria in 'Chitty Chitty Bang Bang,' the 1968 movie musical about a flying car.

We continue flying west southwest, crossing into Switzerland, a nation with a unique place in world affairs. Formed way back in 1291, this small republic (about the size of New Hampshire and Vermont combined) has endured as an independent state into the modern age. Since 1815, it has remained neutral and not participated in any military conflict anywhere in the world. However, all Swiss must serve in the nation's military or in service in some capacity; a few still are used by the Vatican in Rome as the legendary "Swiss Guard," charged with protecting the Pope. Located at the crossroads of Roman and Germanic Europe, Switzerland has four official languages: German, French, Italian, and an old
Latinate dialect called "Romansch." The Alps cover about 60 percent of the nation; from these towering mountain ranges flow rivers in all four directions. The stability and security of Swiss society has led the nation to become an international center of banking; indeed, the Swiss franc coinage designs have not really changed since 1850, making it the longest-running coin series in the world.

We'll learn more about Switzerland in our next flight. For now, we'll head to our destination in the mountain valley town of Interlaken, which is close to the site of an amazing aviation story involving our very own aircraft. On Nov. 19, 1946, a U.S. Army Air Corps C-53 Skymaster (a very close cousin of our own C-47) with eight passengers and a crew of four took off from Vienna, Austria on a flight to Marseille, France. Following the route we're taking today, the plane encountered fog in the Swiss Alps and went off course. A violent downdraft forced the aircraft into a rapid descent, causing it to make contact with the flat, upward-sloping surface of the Gauli Glacier, high up in the mountains. Amazingly, the aircraft remained intact and all 12 people survived the landing without major injuries. But their ordeal was just starting: with their position unknown and no way to hike out, the dozen survivors spent six days and nights in sub-zero temperatures waiting for rescue. After finally being spotted, it took local Swiss crews 13 hours to hike to the remote location, forcing everyone to spend yet another night at the site. The next day, survivors were taken to safety by Swiss pilots who made the first successful glacier landings on skis, thus starting the Swiss Air Rescue service that remains to this day. The aircraft was left to be absorbed into the glacier, but in recent years melting caused by global warming has unveiled parts of the plane after 70 years in the ice!

And with that, we make our descent into Interlaken's Airport. Thanks for coming along and we'll see you next time!

Resources to learn more about today's flight

History of the Berlin Airlift
https://www.history.com/this-day-in-history/u-s-begins-berlin-airlift

Berlin Airlift celebrated at the Aviation Museum of N.H.
https://vimeo.com/377281451

History and culture of Leipzig
https://www.infoplease.com/encyclopedia/places/north-europe/germany/leipzig/history

All about Leipzig today

Johann Sebastian Bach in Leipzig

Leipzig's big Goth music festival
https://en.wikipedia.org/wiki/Wave-Gotik-Treffen

History and culture of Dresden, Germany
https://www.britannica.com/place/Dresden-Germany

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Kurt Vonnegut and Slaughterhouse-Five
https://www.newyorker.com/books/page-turner/what-kurt-vonneguts-slaughterhouse-five-tells-us-now

Facts and history about Prague
https://www.britannica.com/place/Prague

All about St. Vitus Cathedral
https://en.wikipedia.org/wiki/St._Vitus_Cathedral

Top 10 reasons to visit Prague
https://www.prague.eu/en/articles/the-top-10-reasons-to-visit-prague-10591

Incredible time-lapse video about Prague
https://www.youtube.com/watch?v=MRGv2TY6S_o

All about King Wenceslaus and his carol

History of Vienna: the making of a capital
https://www.wien.gv.at/english/history/overview/

Classic and modern Viennese architecture
https://virginia-duran.com/2017/03/07/vienna-architecture/

Vienna's musical heritage
https://www.musicofvienna.com/musical-heritage.htm

The world of the Hapsburgs:
https://www.habsburger.net/en

The current heir to the Habsburg throne:

'Sound of Music' movie locations

Recounting 'Sound of Music' tours
https://blog.ricksteves.com/cameron/2016/06/doh-a-deer/

25 facts about Neuschwanstein Castle
https://www.travelandleisure.com/trip-ideas/neuschwanstein-castle-germany

Neuschwanstein Castle official site
https://www.neuschwanstein.de/englisch/tourist/
Segment 015 / Pilot's log: Monday, June 22, 2020

Today's Flight:

Origin: Interlaken Airport (LSMI), Interlaken, Switzerland

Destination: Gibraltar International Airport (LXGB), Gibraltar

Distance: 985 miles

We've come quite a ways from our start in New Hampshire, but there's still a lot to go. So let's get flying! Today's journey will take us over the highest peaks in Europe, then southwest over Barcelona and the sun-baked south coast of Spain. Our destination is the tiny British territory of Gibraltar, located at the entrance to the Mediterranean Sea.

We'll climb out of Interlaken through valleys leading to three of the most famous peaks of the Alps: the Eiger, Mönch, and the Jungfrau. Each rises above 13,000 feet, and they're visible from Interlaken, their snowcapped peaks looming over the landscape. Our flight plan calls for us to follow the scenic (but short) Lauterbrunnen Valley and go right up and over the saddle between two of the peaks, at a pass called "Jungfrau Joch." We'll need to gain more than 10,000 feet in just a few miles, which means after takeoff we'll have to make a wide loop over the Brienz See just to gain altitude before entering the valley.
Around The World Flight Adventure / An Educator's Guide

The Alps, which in this case tower two miles over the valley below, form a natural barrier that have influenced the course of history for centuries. For all their engineering skill, the Romans never quite conquered them, leaving the territory to the north to be ruled by Germanic tribes. In their own way, the Alps acted as a kind of natural fortress that protected Rome for a long time, with one notable exception: the time in 218 B.C. that Carthaginian General Hannibal somehow marched his troops (including a squadron of elephants) through the mountains and brought a devastating attack on Rome from the north. Later on, the Alps played a role in the formation of a federation of regions called "cantons" that eventually became Switzerland. The deep valleys also helped shape Swiss folk culture, which includes such elements as yodeling, the playing of enormous Alpine horns, and identifying cattle in mountain pastures by the distinctive Swiss cow bell.

The highest part of the Alps in Switzerland, called the "Bernese Oberland," is like a small part of Antarctica in Europe. It's a world of barren rock peaks and year-round snow and ice that form Europe's largest glaciers. But unlike Antarctica, it's easy to visit. Throughout Switzerland, railroads and cablecars whisk visitors to restaurants and hotels high atop alpine peaks. As we prepare to fly over the Jungfraujoch, on our right you'll see a classic example: the Schilthorn, a mountaintop resort that sits astride a craggy 9,744-foot peak. Reached by cablecar from the valley below, it's home to the Piz Gloria, a revolving restaurant where scenes were filmed for the 1969 James Bond classic "On Her Majesty's Secret Service."

Even more amazing is Jungfraujoch itself. This barren snowbound high altitude mountain pass, which tops out at 11,331 feet, is reachable by train. Really! Opened in 1912, the Swiss engineered a mountain-climbing cog railway that uses a tunnel inside the mountain to reach the pass. At the top, the station is the highest in Europe, and serves an observatory, a visitors center, and several restaurants. Even dog sled rides are offered on the snowfields outside, weather permitting. We could probably land here if we had to, but only if our plane had skis.

Once we clear Jungfraujoch, we'll follow the Aletsch Glacier as south and then west. At 14 miles long and more than 3,000 feet thick in places, it's the largest glacier in Continental Europe. Like a very slow-moving river, it's fed by several smaller glaciers from the high peaks; the way these combine to flow together explains the noticeable stripes that the Aletsch Glacier sports in some places. Because
they require freezing temperatures year-round, glaciers are sensitive to climate change. Over many years, they can gradually shrink or grow depending on conditions. In recent years, climate change and rising temperatures have caused glaciers such as the Aletsch to recede or grow smaller. There's a lot more about climate change and glaciers in the links below.

As we fly south and west, we now pass by two of the most famous mountains in the Alps. First up is the Matterhorn, a pyramid-shaped 14,692-foot-high summit on the border of Switzerland and Italy. With its distinctive and dramatic peak, the Matterhorn almost looks like an artist created it. And indeed, the Matterhorn attracted landscape artists starting in the 18th century, popularizing its profile and later fueling the demand for Alpine tourism among wealthy Europeans in the 19th century. Railroads played a big role as well in opening up the Alps to tourism; just as Jungfraujoch got its own railway, plans were worked up for a rail line to the summit of the Matterhorn before an outcry caused the plans to be shelved. Today, the Gornergrat rises nearby to a height of about 10,000 feet, offering spectacular views of this most photogenic of peaks.

Further south rises the highest mountain of all in Western Europe: Mount Blanc. Straddling the French-Italian border, this massive peak rises to 15,774 feet, although the exact height of its flat summit is subject to change depending on the depth of the snow cover. Although tall, Mont Blanc is not particularly difficult to climb, and so each year a whopping 30,000 people make it the summit. Plans are in the works to protect the area from damage due to the heavy use. Mont Blanc has some aviation history: in 1960, French pilot Henri Giraud managed to land a small plane on the summit. He also took off!

As we fly further south, we descend from the high altitudes of the Alps to find ourselves in the warm and sunny south coast of France. We soon pass over into Spain, reaching the enormous city of Barcelona, home to more than 5 million people. The cosmopolitan capital of Spain’s Catalonia region, Barcelona is known for its art and architecture. The incredible Sagrada Família church and other modernist landmarks designed by visionary architect Antoni Gaudí are found throughout the city, giving it a distinctive character that attracts visitors all year round. Barcelona's history includes our friends the Romans, who made the area part of their Empire. It also includes about 200 years of Islamic rule, during the period in the 8th and 9th century when Muslim armies invaded the Iberian Peninsula from the south. There's a lot more about Barcelona's rich history in the links below.

We then continue south to and then east, following the coast of Spanish Mediterranean coast. In recent years, this formerly quiet landscape has turned into a popular resort area, luring vacationers from Northern Europe in the same way the Caribbean islands beckons North Americans. But it's also an important region for agriculture. As one of the world's most productive growing areas, this area of southern Spain supplies a good portion of Europe's fruits and vegetables year-round. From the air, you'll see some regions are literally covered with plastic-roofed greenhouses to manage crops under cultivation.

Like other nations, Spain has a colorful aviation history. Unlike most nations, Spain's aviation history dates back more than a thousand years, and includes several legendary (if unsuccessful) flight experiments. In 852, a man named Armen Firman used a crude parachute of his own design to jump from the top of the minaret of the Great Mosque of Cordoba, landing safely. This adventure inspired his
countryman Abbas Ibn Firnas, who in the late 9th century spent 20 years studying birds. The result was the first known manned glider, built of silk, wood and feathers, which Firnas himself (then in his 60s) demonstrated by jumping off the high ridge of the Sierra Morena near Cordoba. Records indicate Firnas stayed airborne for about 10 minutes, but was severely injured when he crash-landed, never to fly again.

Much later came Diego Marin Aguilera, an 18th century Spanish inventor who observed eagles and dreamed of joining them in flight. Years of study led to the construction of a man-powered flying machine made with wood, cloth, and feathers and featuring metal joints to allow for the flapping of the wings. On May 15, 1793, he launched himself from the highest part of the Castle del Conde. He managed to cross the Arandilla River and flew for about a third of a mile before a metal joint broke and the machine plummeted to the ground. Although unhurt, Aguilera did not fly again because local residents considered him a heretic and destroyed the machine. In Spain, today Aguilera is regarded as the 'Father of Aviation' and the Spanish Air Force has dedicated a monument to him next to the castle where he took off.

We now come to Gibraltar, our today's destination. In ancient times, this small peninsula with its iconic and towering rock was considered to mark the end of the known world. Later, due to its location guarding the narrow entrance to the Mediterranean Sea, Gibraltar came to be of extreme strategic importance. After changing hands many times (and being ruled by our friends the Hapsburgs at one point), it came under British control in 1713, and remains a British Overseas Territory even today. Home to about 32,000 people, Gibraltar remains a busy port and trading center. It's also home to the only wild monkeys in Europe: the Barbary macaques, which live on the higher parts of the rock. We started our journey with the setting of one James Bond movie, so we'll end with another. Gibraltar was the location for opening scenes in a later Bond thriller, 'Living Daylights' (1987), in which Bond and his spy colleagues parachute onto the rock and, among other adventures, encounter Gibraltar's macaque monkeys.

With an area of just 2.6 square miles (and much of that taken up by the iconic rock, which rises 1,398 above the water), space is at a premium. That's one reason why Gibraltar International Airport includes an unusual feature: a major highway runs right across the sole runway. When a plane is taking off or landing, road traffic must be stopped just like at a railroad crossing! Gibraltar's short runway is made more difficult by the frequent presence of strong winds, so landing there is a real workout for any pilot. We look forward to exploring this curious leftover remnant of the British Empire as we prepare for our next journey, which will take us to a new continent: Africa!

Resources to learn more about today's flight

History of Interlaken:
https://www.triposo.com/loc/Interlaken/history/background

Hannibals route across the Alps
https://www.theguardian.com/science/2016/apr/03/where-muck-hannibals-elephants-alps-italy-bill-mahaney-york-university-toronto
Formation of Switzerland
https://www.britannica.com/place/Switzerland/History

The Alps and the culture of Switzerland
https://en.wikipedia.org/wiki/Culture_of_Switzerland

A day trip to the Schilthorn
https://www.balmers.com/schilthorn-what-to-do-what-to-see/

Visiting Jungfraujoch
https://www.myswissalps.com/jungfraujoch

Glaciers and the Matterhorn
https://nsidc.org/cryosphere/glaciers/questions/climate.html

Seven surprising facts about the Matterhorn

Eight reasons to think twice about climbing Mount Blanc
https://www.thelocal.fr/20180717/reasons-to-think-twice-about-climing-mont-blanc

Ten spectacular reasons to climb Mont Blanc
https://www.thelocal.fr/20110930/1349

The Hot Tub on Mont Blanc
http://www.jaccuzzi.ch/index_e.html

A brief history of Barcelona

Catalonia's bid for independence explained

Diego Marin Aguilera, Spain's aviation pioneer
http://the-wanderling.com/marin_aguilera.html

Spain's sea of plastic greenhouses
https://vertical-farming.net/blog/2018/04/02/reimagining-almerias-agriculture/

All about Gibraltar
https://www.britannica.com/place/Gibraltar

The Barbary macaques of Gibraltar
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